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# STREET AND ELECTRIC RAILWAYS

PART I.—STATISTICAL.

PART II.—TECHNICAL.

# STREET AND ELECTRIC RAILWAYS.

## PART I.—STATISTICAL.

### CHAPTER I.

#### INTRODUCTION AND GENERAL EXPLANATIONS.

*Classes of railways included.*—The statistics in this report represent all railways, other than steam roads, in operation during any portion of the year 1912, in continental United States. The canvass did not cover Alaska or the insular possessions. Comparative statistics are shown for the censuses of 1907, 1902, and 1890.

At the census of 1890 the term "street railways" was used in defining the scope of the inquiry. As a rule, the roads for which statistics were presented were those operated on the public streets and thoroughfares of urban districts, and electric traction represented less than one-sixth of the total mileage. At the census of 1902 the term "street and electric railways" was used, and the same designation was employed at the censuses of 1907 and 1912. Since 1902 there has been an extensive development of suburban and interurban electric railways, and by 1907 the track mileage outside of city limits constituted approximately two-fifths of the total track mileage covered by the inquiry. The scope of the inquiry has been materially increased by the electrification of steam roads which own their rights of way, and by the extension of suburban and interurban electric lines located largely on private rights of way. As at prior censuses, the report covers roads operated by cable power and by animal power; roads operating self-propelled cars using gasoline motors, gas-electric motors, and by storage batteries; and one road of a street railway character employing steam traction solely.

In 1912 there were 21 roads employing cable traction, 13 cable exclusively and 8 cable in conjunction with other power. The 13 exclusively cable roads comprise 2 street railway companies in San Francisco and 11 inclined-plane cable roads located 3 in California, 4 in Pennsylvania, and 1 each in Ohio, Minnesota, Virginia, and Tennessee. In 1890 cable roads were an important factor. The trackage then operated by cable power constituted 6 per cent of the total trackage. The inclined-plane cable roads were included as a feature of the cable systems, and have been carried along at the subsequent canvasses. The exclusively gasoline motor roads are located 2 in Georgia, 2 in Texas, and 1 each in the states of Massachusetts, Illinois, California, and Florida. The roads still operated by animal power

exclusively are located 3 in Texas and 1 each in Maine, Indiana, Ohio, Kansas, Arkansas, and Nebraska. The longest has but 3 miles of track.

*Electrically operated divisions of steam roads.*—The statistics for electrically operated divisions of steam roads are included only in cases where full reports could be made therefor separately from those for the steam railroad operations. Some companies reported the same tracks as operated by both steam and electricity, and others that the traffic and operating statistics of an electrically operated branch did not permit of segregation from those pertaining to the main line operated by steam. Statistics for these roads are therefore not included in the general statistics for electric railways. There are also excluded from the general statistics the Chicago Tunnel Co., operating the system of narrow-gauge freight tunnels under the streets of Chicago, the Bingham Central Railway of Utah, a narrow-gauge electric tunnel road serving mines, and the road owned by the state of North Dakota, at Bismarck, and operated in connection with the state capital.

A summary of all electrically operated trackage as it existed at the close of the year 1912, including the electrified divisions of steam roads, the electrified terminals of the New York Central and Hudson River and the Pennsylvania systems, the electrified tunnels of the steam roads, and the two freight tunnel roads above referred to, will be found on page 205 of this report.

*Municipal railways.*—The only railways owned by municipalities in operation in 1912 were those owned by the city of Monroe, La., the North Dakota State Railway, above referred to, and the municipal railway of San Francisco. The first-named railway is regularly operated for public service and is included in this report. The municipal railway of San Francisco was constructed during 1912 and went into operation just before the close of the year (Dec. 24, 1912). In view of the fact that the Geary Street, Park & Ocean Railway, which it supplanted, was operated until May 5, 1912, and had to be included, as it was in operation during the year, the statistics for the municipal railway, although in operation for a few days within the year, were excluded.

*Railway and nonrailway operations.*—Many electric railway companies sell electric current for lighting and industrial purposes. When it was impossible to obtain complete separate reports for the railway and for the electric light and power department, the data for both branches were included in the report for the railway. Statistics of the income of such light and power departments of electric railways, and of the lamps wired for service, are shown in the report for central electric light and power stations, and there are given in that report the aggregate power statistics for the combined industries—central electric light and power stations and street and electric railways.

In some cases electric railway companies are engaged in other businesses, such as the manufacture of gas or ice, the distribution of natural gas, or the operation of a ferry, or have investments in other property not incident to the operation of a railway. When possible, the investments in such collateral enterprises are reported separately from the investments in railway property, and only the net income derived therefrom is reported as revenue. A notable instance where investment in nonrailway property is not separable from that in railway property is the case of the 22-story office buildings known as the Hudson Terminal Buildings of the Hudson & Manhattan Railroad of New York City, the subsurface and lower portions of which pertain to railway operations, while a large revenue is derived from office rentals. Bridge properties, tunnels, amusement parks and resorts, and turnpikes, which have been constructed or acquired by electric railway companies, are as a rule covered by the capitalization of the railways, and in such cases statistics therefor are included. There are several cases where properties of this character are owned by independent corporations and operated by the railway companies under lease or contract, and the capitalization and statistics of operation for these properties are included with those for the railways.

*Period covered.*—The reports, as a rule, are for the calendar year. Of the 975 operating companies, 817 submitted reports for the year ending December 31, 1912; 114 for the year ending June 30, 1912; 14 for fiscal years ending at other dates in 1912; and 30 for years extending into 1913. Every company that was in operation during any portion of the year is included, but the operations of 34 companies did not cover the full year. In 1907 there were 55 part-time companies.

It should be noted that in the preparation of Part II, which deals with the technical features of the industry, the account of improvements and developments in power plants, cars, equipment, etc., has been brought down to date of preparation (1914) and is not confined to conditions existing at the close of 1912.

*Class of companies.*—The companies are fundamentally classified as (1) operating companies, (2) nonoperating or lessor companies, and (3) holding companies.

*Operating companies.*—This class includes companies operating railways, whether the property be owned or leased. The 975 operating companies reported at the present census operated 41,064.82 miles of track, of which 33,416.86 miles was owned by the operating companies, 7,414.33 miles was leased, and 233.63 miles was operated under trackage rights from steam railroad companies. There were 26 companies in 1912, operating 2,576.45 miles, that did not own any track.

*Lessor companies.*—This class includes companies owning railway property leased to operating companies, in most cases under agreement providing for the payment of interest on the funded debt and fixed dividends on the stock of the lessor companies. There were 285 such companies in 1912.

*Holding companies.*—These are organized for the purpose of acquiring the stock and bonds of railways for the purpose of investment, though some of them control the operations of other properties. They may be divided into two classes—(a) incorporated companies duly organized as holding corporations; and (b) unincorporated associations managed by a board of trustees. There were 61 holding companies reported at the present census. They are largely, though not necessarily entirely, identified with railway interests. The line of demarcation between electric railway holding companies and holding companies controlling other public utility corporations is not clearly defined, and the group is largely a matter of selection.

Another phase of railway operations is represented by organizations which act as managers and do not own the roads or the stock of the operating companies. These are not within the scope of this report.

*Basis of classification.*—Operating companies are grouped under three main classifications in order that statistics may be presented for companies operating under similar conditions. The first is a classification according to size, based upon income from railway operations; the second, a classification according to character of business, whether without or with a merger of railway operations and light and power business; and the third, a grouping according to kind of system—"elevated and subway" and "surface." In 1907 statistics were presented for a group of 50 selected interurban lines and 100 selected small urban roads. This classification is of little statistical value and has not been retained.

*Classification according to income from railway operations.*—Three classes, conforming to the groupings adopted by the Interstate Commerce Commission for electric railways, are distinguished, namely:

*Class A.*—Companies having income from railway operations of more than \$1,000,000.

*Class B.*—Companies having income from railway operations of more than \$250,000 but not in excess of \$1,000,000.

*Class C.*—Companies having income from railway operations not in excess of \$250,000.

*Classification according to commercial lighting relations.*—Two classes are distinguished: Companies without light and power departments and in operation for the full year, designated as class X; and companies covering in single reports the operations of a railway and a light and power department, and in operation for the full year, designated as class Y. There are a few companies whose operations were reported for less than a year, and a few which operated for the purpose of holding franchises, etc., and not primarily for traffic. These as a whole are designated as "Miscellaneous," or "class Z." A combination of the financial statistics for companies engaged in commercial lighting and companies that did not sell current gives unsatisfactory results, and the financial accounts of companies composing the "Miscellaneous" group are not strictly comparable with those of full-time companies operated for traffic.

*Classification as "Elevated and subway" and "Surface."*—This classification presents the statistics of the companies operating on elevated, subway, or tunnel tracks, in comparison with the data for surface roads or those which are essentially surface.

The elevated and subway group includes only those whose elevated or subway trackage exceeds their surface trackage, and assembles in one class all roads (except the mixed elevated, surface and subway systems of Boston, Mass., and Philadelphia, Pa.) operating on their own exclusive ways, free from the

interruptions of street traffic, and in districts of great density. This group comprised in 1907 the four elevated roads of Chicago (Northwestern Elevated, South Side Elevated, Metropolitan West Side Elevated, and Chicago & Oak Park Elevated), and the Interborough Rapid Transit and Brooklyn Union Elevated of New York. These six roads operated 420.40 miles of track, comprising 386.32 miles of elevated and subway tracks and 34.08 miles of surface tracks. The group for 1912 includes seven roads, namely, the four Chicago roads and the Interborough Rapid Transit above named, the New York Consolidated, which includes the Brooklyn Union Elevated of 1907, and the Hudson and Manhattan, which operates tunnels under the Hudson River. These seven companies operate 554.49 miles of track, comprising 437.78 miles of elevated, subway, and tunnel tracks, and 116.71 miles of surface tracks.

*Urban and interurban.*—There is no sharp line of demarcation between urban and interurban roads. Many roads primarily urban do a large interurban business, and vice versa, and in some cases, although the interurban trackage exceeds the urban trackage, the bulk of the traffic is within the urban territory. The schedule employed for the present census classified the track operated as "city and suburban" or "interurban," but no attempt has been made thus to classify the traffic.



## CHAPTER II.

### DEVELOPMENT OF THE INDUSTRY.

Table 1 is a summary for the railways of all the classes included at the census of 1912. This table shows the principal facts ascertained at this census, and distinguishes, first, operating companies, and lessor or nonoperating companies; and, second, (a) railways

operated by electric power, wholly or in part; (b) cable roads exclusively including inclined planes; (c) railways operated exclusively by gasoline motor power; and (d) railways operated exclusively by animal power.

**Table 1**

	Total.	Operating companies.	Lessor electric companies.	OPERATED TRACKAGE, CLASSIFIED BY CHARACTER OF POWER.			
				Electricity (wholly or in part).	Power other than electric, exclusively—		
					Cable. <sup>1</sup>	Gasoline motor.	Animal. <sup>2</sup>
Number of companies.....	1,260	975	285	943	14	8	10
Miles of line.....	30,437.86	25,525.52	4,912.34	30,340.36	19.85	61.42	16.23
Miles of track operated.....	41,064.82	34,066.26	6,998.56	40,967.72	25.48	64.55	17.07
Cost of construction and equipment.....	\$4,596,563,292	\$3,867,215,202	\$729,348,090	\$4,596,563,292	\$3,023,052	\$1,674,595	\$90,570
Number of employees.....	282,461	282,461	.....	281,960	414	49	38
Number of passenger cars.....	76,162	76,162	.....	76,016	96	21	29
Number of revenue passengers.....	9,545,554,667	9,545,554,667	.....	9,528,339,013	16,019,850	851,842	343,962

<sup>1</sup> Includes 1 company with both cable and animal power (0.49 of a mile of track operated by animal power).

<sup>2</sup> Includes 1 company with 2 miles of line and 2.03 miles of track operated exclusively by steam power.

<sup>3</sup> Includes track leased from steam railroads, bridge companies, etc.

<sup>4</sup> Track owned by nonoperating electric railway companies.

Electric railways are by far the most important class of roads covered by the census. Of the 943 companies included in this group, three reported the use of animal power, seven cable, and two gasoline motors as the motive power for a portion of the track. The electric railway companies operated 99.7 per cent of the total trackage covered by the census. There were only nine companies that reported the use of animal power exclusively, although this was practically the only kind of power used 30 years ago.

*Electric railways and central electric stations.*—A comparison of the primary power, dynamo capacity, and output of stations for both central electric stations and electric railways is of interest. It is necessary to make such a combination of the statistics for the two industries because of the constant changes in the extent to which railway companies engage in central station work. A central station reported as such at one census may have been absorbed by some railway company and reported as part of its system at the next enumeration. Table 2 presents the combined totals for the two industries, with reference to primary power, dynamo capacity, and output of stations, by geographic divisions, for 1912 and 1907.

There has been a large increase in primary power during the last five years. The total horsepower increased from 6,618,011 in 1907 to 11,193,699 in 1912, or 69.1 per cent. Steam power still largely predominates, although the increase in water power has been

much greater than that for any other class. There was a decrease of 1,314 in the number of steam engines and steam turbines, while this class of power increased 3,011,286 horsepower, or 59 per cent, the increase in horsepower per unit being from 447 in 1907 to 803 in 1912.

The utilization of water power has resulted in the completion of many large hydroelectric plants in all sections where it is available and within transmitting distance. This class of power increased from 1,441,048 horsepower in 1907 to 2,942,388 in 1912, or 104.2 per cent, the increase per unit being from 532 to 887. The greatest development of water power has been in the Pacific division, although that in the Middle Atlantic division has been very marked. The increase in horsepower of gas and oil engines was 87.4 per cent for the five years.

The increase in generating capacity has been greater than that in primary power, the kilowatt capacity of dynamos having increased from 4,432,641 in 1907 to 7,642,755 in 1912, or 72.4 per cent, as compared with an increase of 69.1 per cent in primary power. This increase is wholly in alternating-current generators, direct-current dynamos showing a decrease in all geographic divisions with the exception of the East South Central. There were 17,585,662,014 kilowatt hours generated during the year, an increase of 6,964,255,177 kilowatt hours, or 65.6 per cent, over the figure for 1907.

## COMPARATIVE SUMMARY—ELECTRIC RAILWAYS AND CENTRAL ELECTRIC STATIONS COMBINED—PRIMARY POWER, DYNAMO CAPACITY, AND OUTPUT OF STATIONS, BY GEOGRAPHIC DIVISIONS: 1912 AND 1907.

Table 2	DIVISION. <sup>1</sup>	Census.	PRIMARY POWER.						KILOWATT CAPACITY OF DYNAMOS.			Total output of stations, kilowatt hours.	
			Total horse-power.	Steam engines and steam turbines.		Gas and oil engines.		Water wheels.		Total.	Direct current.		Alternating current.
				Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.				
	United States.....	1912 1907	11,193,699 6,618,011	10,108 11,422	8,116,086 5,104,800	1,164 504	135,225 72,163	3,316 2,709	2,942,388 1,441,048	7,642,755 4,432,641	1,243,365 1,428,954	6,399,390 3,003,687	17,585,662,014 10,621,406,837
	New England.....	1912 1907	1,157,132 718,499	885 1,126	903,604 566,829	55 39	10,017 6,823	563 520	243,511 144,847	820,628 501,427	210,017 240,673	610,611 260,754	1,555,814,478 1,015,385,019
	Middle Atlantic.....	1912 1907	2,991,020 1,927,114	1,961 2,478	2,291,573 1,561,260	192 118	33,939 17,137	595 532	665,508 348,717	2,047,134 1,338,048	340,876 449,593	1,706,258 888,455	5,371,253,169 3,679,460,449
	East North Central.....	1912 1907	2,515,706 1,473,949	2,627 3,137	2,183,091 1,318,501	224 123	26,710 12,725	703 610	305,905 142,723	1,756,368 976,419	342,488 371,929	1,413,880 604,490	3,995,158,144 2,343,163,832
	West North Central.....	1912 1907	929,220 577,054	1,513 1,538	766,922 468,027	424 97	29,578 7,336	272 200	132,720 101,691	641,343 379,206	113,222 113,895	528,121 265,311	1,209,359,516 786,641,429
	South Atlantic.....	1912 1907	1,004,038 552,496	945 950	587,888 374,427	60 31	11,373 6,520	385 266	404,777 171,549	682,325 367,195	79,616 89,764	602,709 277,431	1,074,027,912 643,771,881
	East South Central.....	1912 1907	354,338 218,799	616 603	315,628 210,492	13 3	1,080 60	47 29	37,630 8,247	241,347 147,736	48,286 43,924	193,061 103,812	476,150,487 298,426,946
	West South Central.....	1912 1907	344,799 206,039	890 813	318,767 199,287	153 59	17,354 3,690	35 24	8,678 3,062	242,617 136,856	48,608 51,604	194,009 85,252	425,302,675 258,425,302
	Mountain.....	1912 1907	518,721 261,597	306 337	179,637 112,244	20 13	2,695 855	313 231	336,389 148,498	317,176 175,220	17,089 22,677	300,087 152,543	980,641,612 446,471,630
	Pacific.....	1912 1907	1,378,725 682,464	365 440	568,976 293,733	23 21	2,479 17,017	403 297	807,270 371,714	893,817 410,534	43,163 44,895	850,654 365,639	2,497,953,991 1,149,660,340

<sup>1</sup> See page 25 (Central Electric Light and Power Stations) for states composing the several geographic divisions.

In addition to power employed for electric generation by the electric railways and the central electric stations, 193,956 horsepower was utilized in electric generation by traction companies not included in the street and electric railway industry, namely, those operating the electrified divisions of steam roads, the electrified tunnels of steam roads, and the two freight tunnels already referred to. Table 3 gives the combined power statistics for electric traction systems and central electric stations in 1912.

Table 3	POWER STATISTICS FOR ALL ELECTRIC TRACTION SYSTEMS AND CENTRAL ELECTRIC STATIONS: 1912.			
	Total.	Electric railways.	Electrified divisions of steam roads, electrified tunnels, etc.	Central electric stations.
Total horsepower.....	11,387,655	3,665,051	193,956	7,528,648
Steam engines and steam turbines:				
Number.....	10,175	2,264	67	7,844
Horsepower.....	8,302,042	3,169,554	185,956	4,946,532
Gas and oil engines:				
Number.....	1,164	48	.....	1,116
Horsepower.....	135,225	24,190	.....	111,035
Water wheels and turbines:				
Number.....	3,319	383	3	2,933
Horsepower.....	2,950,388	471,307	8,000	2,471,081
Kilowatt capacity of dynamos.....	7,800,591	2,508,066	157,836	5,134,689
Direct current.....	1,254,205	769,875	10,840	473,490
Alternating current.....	6,546,386	1,738,191	146,996	4,661,199
Total output of stations, kilowatt hours.....	17,872,733,119	6,052,699,008	287,121,105	11,532,963,006

*Comparison with prior censuses.*—The censuses of 1890 and 1902 covered the 12 months ending with June 30 of the respective years, while those for 1907 and 1912 related to the calendar years. Since 1890 the scope of the inquiry has been broadened to meet the changes incident to the more general use of electricity as a motive power, and the interests represented by the statistics for 1912 differ in many important respects from those covered by the figures for the earlier censuses. In 1890 practically all railways, except those operated by steam, were correctly designated "street railways," as they were confined mainly to urban districts and operated on public streets. Now, however, many of the roads included in the class of "street and electric railways" extend into rural districts and engage in business similar to that of steam railroads.

Substantially the same form of schedule was used at the censuses of 1902, 1907, and 1912. In formulating the schedule for 1912, however, it was deemed advisable to omit some of the subinquiries used at prior censuses because the statistics secured from these inquiries were not entirely satisfactory. The most important change affecting the comparability of the statistics relates to the number of persons employed. For the censuses of 1902 and 1907 the average number employed during the entire year was reported; the schedule of 1912 called for the number employed on September 16, and if statistics were not

available for that day or month, data were obtained for the nearest representative or normal day. For the majority of establishments it was impossible to obtain a correct average of the number employed during the entire year, and it was believed that obtaining the number on a specified day would result in greater uniformity, also that this number would not vary greatly from the average number if the average was correctly computed. In many instances it is difficult to classify the employees according to the work upon which they are engaged, and in preparing the schedule for the census of 1912 it was decided to attempt only three groupings of wage earners, namely, conductors, motormen, and all other wage earners.

In 1890 only 706 out of the 789 street railways in the country made reports to the Census Bureau. The figures of trackage, cost of construction, number of cars, number of employees, and number of passengers for the remaining 83 companies were either obtained from outside sources or estimated. The data thus secured from sources other than certified returns constituted from 4.2 to 10.4 per cent of the totals for the respective items mentioned. The returns of earnings and expenditures and of car-mileage were incomplete, even in the case of many of the companies which reported fully other statistics; but these returns were

not supplemented by estimates, so that the figures given as totals represent from 10 to 20 per cent less than the actual totals for all companies.

Of the operating and lessor companies covered by the census of 1902, only 20 failed to report the cost of construction; and of the operating companies, only 20 failed to furnish statistics of employees, 6 of fare passengers, and 18 of earnings and expenses. Moreover, two of the six companies that did not report the number of fare passengers were exclusively freight companies.

The statistics for 1907 represent operating companies, whether they were in operation during the whole year or only a portion of the year. Six operating companies, however, failed to report financial data.

The statistics for 1912 are essentially complete and based upon certified returns. In only a few cases has it been necessary to resort to the reports of public-service commissions, railroad commissions, or other similar sources for data.

Table 4 is a comparative summary, and shows the principal features covered by the census of street and electric railways that are comparable for 1912, 1907, 1902, and 1890, together with the percentages of increase.

STREET AND ELECTRIC RAILWAYS—COMPARATIVE SUMMARY.

Table 4	1912	1907	1902	1890	PER CENT OF INCREASE. <sup>1</sup>			
					1902-1912	1907-1912	1902-1907	1890-1902
Number of companies.....	1,260	1,236	987	789	27.7	1.9	25.2	25.1
Operating.....	975	945	817	769	19.3	3.2	15.7	6.2
Lessor.....	285	291	170	20	67.6	-2.1	71.2	750.0
Miles of line.....	230,437.86	25,547.19	16,645.34	5,783.47	82.9	19.1	53.5	187.8
Miles of track.....	41,064.82	34,381.51	22,576.99	8,123.02	81.9	19.4	52.3	177.9
Operated by—								
Electricity.....	40,808.39	34,037.64	21,901.53	1,261.97	86.3	19.9	55.4	1,635.5
Cable.....	56.41	61.71	240.69	488.31	-76.6	-8.6	-74.4	-50.7
Animal power.....	57.52	136.11	259.10	5,661.44	-77.8	-57.7	-47.5	-95.4
Steam.....	76.34	105.06	169.61	711.30	-55.0	-27.3	-38.1	-76.2
Gasoline motor.....	66.16	40.99	6.06	.....	991.7	61.4	.....	.....
Cost of construction and equipment.....	\$4,596,563,292	\$3,637,668,708	\$2,167,634,077	\$389,357,289	112.1	26.4	67.8	456.7
Number of employees.....	282,461	221,429	140,769	70,764	100.7	27.6	57.3	98.9
Number of passenger cars.....	76,162	70,016	60,290	32,505	26.3	8.8	16.1	87.5
Number of revenue passengers.....	9,545,554,667	7,441,114,508	4,774,211,904	2,023,010,202	99.9	28.3	55.9	136.0
Number of revenue passengers per mile of track.....	232,556	216,522	212,217	240,047	9.6	7.4	2.0	-14.8
Ratio of operating expenses to operating revenues (per cent).....	58.7	60.1	57.5	68.4	.....	.....	.....	.....

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Exclusive of 19.73 miles not operated and 18.26 miles leased to steam railroad companies.

<sup>3</sup> Exclusive of 23.49 miles not operated and 31.22 miles leased to steam railroad companies.

<sup>4</sup> Exclusive of 17.05 miles not operated and 5 miles leased to steam railroad companies.

<sup>5</sup> Exclusive of 17.60 miles of duplicated track but including 4.47 miles not operated.

<sup>6</sup> Compressed air.

<sup>7</sup> Exclusive of trackage of two railways carrying freight only and of track not operated by electric railway companies.

<sup>8</sup> Exclusive of trackage of one railway carrying freight only and of track not operated by electric railway companies.

<sup>9</sup> Exclusive of trackage of two railways carrying freight only and of four companies not reporting revenue passengers.

The total trackage shown in the tables throughout this report represents the mileage owned or leased by companies in continental United States. In some cases the track extends across the border into Canada and Mexico. This trackage outside of the United States amounted to 31.91 miles in 1912, 27.52 miles in 1907, and 4.20 miles in 1902.

The total trackage reported as owned by the railway companies at the census of 1912 was 40,470.13 miles, this including 23.49 miles of idle track and 31.22 miles of track leased to steam railroads.

The railway companies operated 415.77 miles of track leased from steam roads and operated over 233.63 miles of trackage rights from steam roads. Deducting from the track owned that which was idle or leased to steam roads, and adding thereto the track leased from steam roads and the trackage rights from steam roads, there is obtained the total trackage operated by the street and electric railways, namely, 41,064.82 miles.

The total trackage owned is comparable with 34,403.56 miles in 1907, an increase for the five-year

period of 6,066.57 miles, or 17.6 per cent. The increase during the same period in track operated was 6,683.31 miles, or 19.4 per cent. The electrification of the street railways was essentially completed by 1902, the trackage operated by power other than electric in that year constituting but 3 per cent of the total trackage. In 1907 the trackage other than electric constituted 1 per cent of the total and in 1912 six-tenths of 1 per cent. The percentages of increase show a large growth during each five-year period.

The cost of construction and equipment as reported by a large number of companies is practically the par value of their outstanding stock and bonds, but there are many exceptions to this rule, due to a considerable extent to the investment of surplus earnings in plant and equipment without a corresponding increase in capitalization. The amount reported for cost of construction and equipment should not be taken as representing the actual amount invested in tracks, railway equipment, and railway property. It includes investments in installations for the generation of electric power not all of which is used for railway purposes, and in distributing installations of light and power departments of electric railways; some investments in other industries, office buildings, etc., not separable from railway investments; and a large amount of intangible capital, capitalized franchise values; etc. At the census of 1907 nearly one-half (48.3 per cent) of the companies furnishing balance sheets stated that franchise values were included under cost of construction, and one-third (32.9 per cent) that they were not included, the remainder failing to answer the inquiry. The totals for 1912, 1907, and 1902 are more nearly comparable with each other than either is with 1890, because of greater uniformity in the practice of railway accountants in the later years in regard to the items which should be charged to cost of construction. The cost of construction and equipment as reported shows an average of \$113,579 per mile of track owned in 1912, as compared with \$105,735 per mile of track in 1907 and \$96,005 in 1902. For 1890, when horse cars prevailed, the average investment per mile of track was \$47,933.

The number of revenue passengers carried per mile of track indicates a steady increase in density of traffic during the last decade, namely, from 212,259 in 1902 to 216,522 in 1907 and 232,556 in 1912. During the prior census period 1890 to 1902 there was a decrease in traffic density, due to the great expansion of electric lines, the trackage increase being relatively greater than the growth in passenger traffic.

At the censuses of 1912, 1907, and 1902 substantially the same form of schedule was used, so that a comparison more in detail can be made for these years. Such a comparison is given in Table 5.

This table shows remarkable gains for all branches of the industry. The track operated during 1912 exceeded that in 1902 by 18,492.30 miles, the percentage of increase being 81.9. The horsepower of the prime movers required to generate the electric motive

power increased almost threefold. The number of passengers carried during 1912 was more than twice as great as the corresponding number for 1902. There were 1,260 companies reported in 1912, an increase of 24, or 1.9 per cent, since 1907, of which 975 were operating and 285 lessor. Operating companies showed an increase of 3.2 per cent during the last five-year period, while there was a decrease of 2.1 per cent in the number of lessor companies.

No effort was made to secure data for railway properties under construction in 1912 unless actually in operation during a portion of the year. Limited data of this character were secured for the census of 1907, but owing to the difficulty in obtaining actual figures for the amounts invested in partially expired contracts for construction, equipment, etc., it was decided to abandon the inquiry.

In considering the large increase in the number of salaried employees and in total salaries paid, cognizance must be taken of the differences between the schedules used at the two censuses. In 1907 among the enumerated classes of wage earners were foremen, inspectors, and electricians, and it appears probable that some companies included certain classes of employees that had been reported as wage earners in 1907, as salaried employees in 1912.

The relatively large increase in cars, other than passenger cars, is due to the development of freight business on interurban lines.

Figures are not available for the quantity of current purchased in 1907 and 1902, but the expenditure for power purchased was \$24,546,530 in 1912, as compared with \$12,342,258 in 1907 and \$3,871,518 in 1902. The aggregate of current generated and current purchased involves duplication, as it includes power purchased from railway companies as well as that purchased from electric power companies. It is not practicable to determine the extent of this duplication, though it may be stated that the greater part of the current purchased is generated by electric power companies. The value of current purchased from electric railway companies also causes duplication in the financial data, appearing as income in the reports of the railway companies generating the current, and as expense in the reports of the companies to which it was sold. Nor can any comparison be made between quantity of current generated and purchased and car mileage, as considerable current is sold by the railway companies for light and industrial purposes. The revenue received from the sale of current for light and power, including sale of current to other public-service corporations, was \$36,500,030 in 1912, \$20,093,302 in 1907, and \$7,703,574 in 1902. The percentages of increase for this class of revenue, namely, 373.8 per cent, 81.7 per cent, and 160.8 per cent for the census periods 1902-1912, 1907-1912, and 1902-1907, respectively, are about threefold those for transportation revenues, the percentages of increase for the latter being, respectively, 120.4, 33.3, and 65.4.

## STREET AND ELECTRIC RAILWAYS.

COMPARATIVE SUMMARY, INCLUDING TRAFFIC, INCOME, AND CAPITALIZATION: 1912, 1907, AND 1902.

Table 5	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies.....	1,260	1,236	987	27.7	1.9	25.2
Operating.....	975	945	817	19.3	3.2	15.7
Lessor.....	285	291	170	67.6	-2.1	71.2
Miles of line.....	30,437.86	25,547.19	16,645.34	82.9	19.1	53.5
Miles of single track <sup>2</sup> .....	41,064.82	34,381.51	22,572.52	81.9	19.4	52.3
Rolling stock:						
Cars, number.....	94,016	83,641	66,784	40.8	12.4	25.2
Passenger.....	76,162	70,016	60,290	26.3	8.8	16.1
All other.....	17,854	13,625	6,494	174.9	31.0	109.8
Electric locomotives.....	277	117	3			
Persons employed by operating companies:						
Number.....	282,461	221,429	140,769	100.7	27.6	57.3
Salaries and wages.....	\$200,890,939	\$150,991,099	\$88,210,165	127.7	33.0	71.2
Salaried employees—						
Number.....	23,271	11,700	7,128	226.5	98.9	64.1
Salaries.....	\$26,128,786	\$12,909,466	\$7,439,716	251.2	102.4	73.5
Wage earners—						
Average number.....	4,259,190	209,729	133,641	93.9	23.6	56.9
Wages.....	\$174,762,153	\$138,081,633	\$80,770,449	116.4	26.6	71.0
Power:						
Horsepower, total.....	3,665,061	2,519,823	1,359,285	169.6	45.4	85.4
Steam (including turbines) and gas engines—						
Number.....	2,312	3,409	2,652	-12.8	-32.2	28.5
Horsepower.....	3,193,744	2,427,862	1,310,132	143.8	31.5	85.3
Water wheels—						
Number.....	383	228	159	140.9	68.0	43.4
Horsepower.....	471,307	91,961	49,153	858.9	412.5	87.1
Kilowatt capacity of dynamos.....	2,508,066	1,723,416	898,362	179.2	45.5	91.8
Output of stations, kilowatt hours.....	6,052,699,008	4,759,130,100	2,261,484,397	167.6	27.2	110.4
Current purchased, kilowatt hours.....	2,967,318,781	( <sup>3</sup> )	( <sup>3</sup> )			
Traffic:						
Passengers carried.....	12,135,341,716	9,533,080,766	5,836,615,296	107.9	27.3	63.3
Revenue.....	9,545,554,667	7,441,114,508	4,774,211,904	99.9	28.3	55.9
Transfer.....	2,423,918,024	1,995,658,101	1,062,403,392	128.2	21.5	87.8
Free.....	165,869,025	96,308,157	( <sup>3</sup> )		72.2	
Revenue car mileage.....	1,921,620,074	1,617,731,300	1,144,430,466	67.9	18.8	41.4
Passenger.....	1,885,870,157	1,583,831,199	1,120,101,944	68.4	19.1	41.4
Express, mail, and freight.....	35,749,917	33,900,101	24,328,522	46.9	5.5	39.3
Revenue car hours <sup>4</sup> .....	190,478,140	151,338,944	65,869,342			
Passenger.....	187,590,223	145,678,052	65,403,287			
Express, mail, and freight.....	2,887,917	2,660,892	466,055			
Average number of revenue passengers—						
Per mile of track operated <sup>5</sup> .....	232,556	216,522	212,217	9.6	7.4	2.0
Per revenue passenger car mile.....	5.06	4.70				
Per revenue passenger car hour.....	48.38	43.06	33.28			
Condensed income accounts:						
Operating companies—						
Gross income <sup>6</sup> .....	\$585,930,517	\$429,744,254	\$250,504,627	133.9	36.3	71.6
Operating revenues.....	567,511,704	418,187,858	247,553,999	129.2	35.7	63.9
Transportation revenues.....	520,184,773	390,276,347	235,997,005	120.4	33.3	65.4
Nontransportation revenues.....	47,326,931	27,911,511	11,556,994	309.5	69.6	141.5
Income from other sources.....	18,418,813	11,556,396	2,950,628	524.2	59.4	291.7
Operating expenses.....	332,896,356	251,309,252	142,312,597	133.9	32.5	76.6
Net earnings (operating revenues less operating expenses).....	234,615,348	166,878,606	105,241,402	122.9	40.6	58.6
Gross income, less operating expenses.....	253,034,161	178,435,002	108,192,030	133.9	41.8	64.9
Deductions from income.....	191,123,408	138,094,716	77,595,053	146.3	38.4	78.0
Taxes.....	35,027,965	19,765,602	13,078,899	167.8	77.3	51.0
Interest on funded and floating debt and mortgages.....	98,025,338	63,740,744	38,085,911	157.4	53.8	67.4
Rent of leased lines and terminals.....	44,784,621	48,022,596	25,518,225	75.5	-6.7	88.2
Miscellaneous.....	13,285,684	6,575,774	912,018			
Net income.....	61,910,753	40,340,286	30,596,977	102.3	53.5	31.8
Dividends.....	51,650,117	26,454,732	15,882,110	225.2	95.2	66.6
Surplus.....	10,260,636	13,885,554	14,714,867	-30.3	-26.1	5.6
Lessor companies—						
Gross income <sup>7</sup> .....	35,005,367	47,913,249	26,138,899	36.2	-25.7	83.3
Rentals from operating companies.....	35,144,621	47,500,933	26,116,854	34.6	-20.0	81.9
Miscellaneous income.....	460,846	412,316	22,045		11.3	
Deductions from income.....	16,090,372	19,465,984	8,779,294	83.3	-17.3	121.7
Interest on funded and other debt.....	15,234,132	18,030,522	8,376,559	81.9	-15.5	115.2
Miscellaneous deductions.....	856,240	1,435,462	402,735	112.6	-40.4	256.4
Net income.....	19,514,955	28,447,265	17,359,605	12.4	-31.4	63.9
Dividends.....	19,342,101	28,030,542	17,157,061	12.7	-31.0	63.4
Surplus.....	172,894	416,723	202,544	-14.6	-58.5	105.7
Capitalization:						
Total.....	4,708,568,141	3,774,772,066	2,308,282,099	104.0	24.7	63.5
Operating companies.....	3,956,718,023	2,811,876,374	1,775,468,781	122.9	40.7	58.4
Lessor companies.....	751,850,118	962,895,722	532,813,318	41.1	-21.9	80.7
Capital stock.....	2,379,346,313	2,097,708,856	1,315,572,060	80.9	13.4	59.5
Operating companies.....	1,957,300,149	1,543,269,062	982,969,070	99.1	26.3	57.0
Lessor companies.....	422,046,164	554,629,854	332,603,890	26.8	-23.9	69.7
Funded debt.....	2,329,221,828	1,677,063,240	992,709,139	134.6	38.9	68.9
Operating companies.....	1,990,417,874	1,268,607,372	792,499,711	152.3	57.6	60.1
Lessor companies.....	328,803,954	408,455,868	200,209,428	64.7	-19.3	104.0

<sup>1</sup> A minus sign (—) denotes decrease.<sup>2</sup> Includes track lying outside the United States, namely, 1912, 31.91 miles; 1907, 27.52 miles; and 1902, 4.20 miles. Exclusive of track not operated.<sup>3</sup> For 939 companies in 1907 and for 797 companies in 1902.<sup>4</sup> Number employed Sept. 16, 1912.<sup>5</sup> Figures not available.<sup>6</sup> Represents 899 companies in 1912, 734 companies in 1907, and 390 companies in 1902.<sup>7</sup> Exclusive of companies doing freight traffic only and in 1902 of 4 companies not reporting revenue passengers.<sup>8</sup> Exclusive of 6 companies in 1907 and of 18 companies in 1902 which failed to furnish this information.<sup>9</sup> Exclusive of 12 companies in 1902 which failed to furnish this information.

Although the number of lessor companies in 1912 is but six less than the number reported in 1907, notable decreases are shown in the income, dividends, and capitalization of such companies.

The income of the lessor companies on account of rentals from the operating companies was \$35,144,521 in 1912, as compared with \$47,500,933 in 1907, a decrease of 26 per cent; and the capitalization of the companies leasing their properties was \$751,850,118 in 1912, as compared with \$962,895,722 in 1907, a decrease of 21.9 per cent. The changes that occurred during the decade are brought out more clearly by the percentages given in Table 6.

Table 6	PER CENT DISTRIBUTION OF ITEMS IN TABLE 5.		
	1912	1907	1902
Number of companies.....	100.0	100.0	100.0
Operating.....	77.4	76.5	82.8
Lessor.....	22.6	23.5	17.2
Cars, total number.....	100.0	100.0	100.0
Passenger.....	81.0	83.7	90.3
All other.....	19.0	16.3	9.7
Persons employed, total number.....	100.0	100.0	100.0
Salaried employees.....	8.2	5.3	5.1
Wage earners.....	91.8	94.7	94.9
Power, total horsepower.....	100.0	100.0	100.0
Steam and gas engines.....	87.1	96.3	96.4
Water wheels.....	12.9	3.7	3.6
Traffic:			
Passengers carried, total number.....	100.0	100.0	100.0
Revenue.....	78.6	78.1	81.8
Transfer.....	20.0	20.9	18.2
Free.....	1.4	1.0	.....
Per cent of revenue passengers <sup>1</sup> —			
Revenue passengers.....	100.0	100.0	100.0
Transfer.....	25.4	26.8	22.3
Free.....	1.7	1.3	.....
Revenue car-mileage.....	100.0	100.0	100.0
Passenger.....	98.2	97.9	97.9
Express, mail, and freight.....	1.8	2.1	2.1
Revenue car-hours.....	100.0	100.0	100.0
Passenger.....	98.5	98.2	99.3
Express, mail, and freight.....	1.5	1.8	0.7
Income accounts:			
Operating companies—			
Gross income.....	100.0	100.0	100.0
Operating revenues.....	96.8	97.3	98.8
Transportation revenues.....	88.7	90.8	94.2
Nontransportation revenues.....	8.1	6.5	4.6
Income from other sources.....	3.2	2.7	1.2
Operating expenses.....	56.8	58.5	56.8
Net earnings (operating revenues less operating expenses).....	40.0	38.8	42.0
Gross income less operating expenses.....	43.2	41.5	43.2
Deductions from income.....	32.6	32.1	31.0
Net income.....	10.6	9.4	12.2
Dividends.....	8.8	6.2	6.3
Surplus.....	1.8	3.2	5.9
Lessor companies—			
Gross income.....	100.0	100.0	100.0
Rentals from operating companies.....	98.7	99.1	99.9
Miscellaneous income.....	1.3	0.9	0.1
Deductions from income.....	45.2	40.6	33.6
Interest.....	42.8	37.6	32.1
Miscellaneous.....	2.4	3.0	1.5
Net income.....	54.8	59.4	66.4
Dividends.....	54.3	58.5	65.6
Surplus.....	0.5	0.9	0.8
Capitalization.....	100.0	100.0	100.0
Operating companies.....	84.0	74.5	76.9
Lessor companies.....	16.0	25.5	23.1
Capital stock.....	50.5	55.6	57.0
Operating companies.....	41.5	40.9	42.6
Lessor companies.....	9.0	14.7	14.4
Funded debt.....	49.5	44.4	43.1
Operating companies.....	42.5	33.6	34.4
Lessor companies.....	7.0	10.8	8.7
Dividends.....	100.0	100.0	100.0
Operating companies.....	72.8	48.6	48.1
Lessor companies.....	27.2	51.4	51.9
Interest on funded debt, floating debt, and mortgages.....	100.0	100.0	100.0
Operating companies.....	86.5	78.0	82.0
Lessor companies.....	13.5	22.0	18.0

<sup>1</sup> Ratio of transfer and free passengers to revenue passengers.

This table brings out a number of important changes which took place in the equipment, traffic, income, and expenses of the street and electric railways between 1902 and 1912. Cars, other than passenger cars, form an increasing proportion of the total number at each census, and water power shows a marked relative increase as compared with steam and gas power. Slight gains are also shown in the numbers of revenue and free passengers carried. As previously explained, the increase in the proportion of salaried employees as compared with wage earners is due probably to differences between the constructions placed upon the inquiry at the last two censuses.

There appears under "Income" a relatively large and steady gain in nontransportation and nonoperating income. In this connection a comparison of income and expense on a passenger basis is of interest. Table 7 shows the gross income, the several classes of income, and the distribution accounts, reduced to a unit revenue-passenger basis, for 1912, 1907, and 1902.

Table 7	INCOME AND EXPENSE PER REVENUE PASSENGER.		
	1912	1907	1902
ACCOUNT.			
	Cents.	Cents.	Cents.
Gross income.....	6.14	5.78	5.25
Transportation revenue.....	5.45	5.25	4.95
Passenger revenue.....	5.27	5.14	4.90
Other transportation revenue.....	0.18	0.11	0.05
Nontransportation income.....	0.69	0.53	0.30
Operating expenses.....	3.40	3.38	2.98
Gross income less operating expenses.....	2.65	2.40	2.27
Deductions from income.....	2.00	1.86	1.63
Net income.....	0.65	0.54	0.64

*Increase in size of companies.*—There is no uniformity in the size or importance of the properties operated by the separate companies, and frequently, because of certain legal restrictions, several properties that practically form one system have been reported as distinct units and counted as separate companies, while, on the other hand, where legal restrictions have not prohibited similar groups of properties have been reported in combination and counted as one. The combination of formerly independent companies has characterized the development of electric railways during recent years, and the change in the number of companies reported at the different censuses is no indication of the increase or decrease in the extent of the industry. Table 8 shows the average size and traffic of the operating companies in 1912, 1907, 1902, and 1890, in miles of track, number of cars, passenger-car-miles, revenue passengers, and number of employees.

In 1912 the average company operated approximately four times as much track and almost twice as many cars as in 1890, while the average number of revenue passengers per car carried in 1912 was 125,332, as compared with 62,237 in 1890. This shows an increase in the average number per car of a little more than 100 per cent for the period. The mileage of pas-



senger cars was not reported prior to 1902. The average number of passenger-car-miles per company increased from 1,370,994 in 1907 to 1,938,202 in 1912, or 41.4 per cent, and during the same period the miles of track per company increased from 27.63 to 42.12, or 52.4 per cent.

Table 8

	COMPARATIVE SIZE OF OPERATING COMPANIES <sup>1</sup> AS INDICATED BY AVERAGE NUMBER OF—				
	Miles of track.	Passenger cars.	Passenger-car-miles.	Revenue passengers.	Number of employees.
Census:					
1912.....	42.12	78	1,938,202	9,810,436	290
1907.....	35.38	74	1,677,787	7,882,537	236
1902.....	27.63	74	1,382,842	5,886,821	177
1890.....	10.56	42	( <sup>2</sup> )	2,630,702	92
Per cent of increase:					
1902-1912.....	52.4	5.4	40.2	66.7	63.8
1907-1912.....	15.7	5.4	15.0	24.5	22.9
1902-1907.....	31.8	—	21.3	33.9	33.3
1890-1902.....	161.6	76.2	—	123.8	92.4

<sup>1</sup> In 1912, 2 companies, and in 1907, 1 company, had no revenue passengers (freight only).  
<sup>2</sup> Figures not available.

The increase in the size of companies is further illustrated by the classification of the companies according to miles of line for the several census years, given in Table 9. The term "miles of line" refers to the length of the first main track or road, and does not cover second tracks, sidings, or turnouts.

Table 9

	COMPANIES CLASSIFIED ACCORDING TO MILES OF LINE.				
	Total.	Classification groups—miles of line per company.			
		Less than 10.	10 and less than 50.	50 and less than 100.	100 and over.
Number of operating companies:					
1912.....	975	406	421	89	59
1907.....	945	399	424	75	47
1902.....	817	394	354	44	25
1890.....	1,691	557	126	6	2
Per cent of total—					
1912.....	100.0	41.6	43.2	9.1	6.1
1907.....	100.0	42.2	44.9	7.9	5.0
1902.....	100.0	48.2	43.3	5.4	3.1
1890.....	100.0	80.6	18.2	0.9	0.3
Miles of line:					
1912.....	30,437.86	1,992.51	9,337.41	5,985.93	13,122.01
1907.....	25,547.19	2,012.37	9,337.33	5,135.33	9,062.16
1902.....	16,645.34	1,957.16	7,340.65	2,998.43	4,349.10
1890.....	25,119.53	2,304.49	2,183.59	392.80	238.65
Per cent of total—					
1912.....	100.0	6.5	30.7	19.7	43.1
1907.....	100.0	7.9	36.5	20.1	35.5
1902.....	100.0	11.8	44.1	18.0	26.1
1890.....	100.0	45.0	42.7	7.7	4.7

<sup>1</sup> Exclusive of 78 companies that did not make precise returns of trackage.

<sup>2</sup> Exclusive of 663.94 miles, estimated.

The lower group, "Less than 10" miles of line, included the largest amount of line and four-fifths of the companies in 1890, and the higher group, "100 and over," the largest amount of line in 1912, the "10 and less than 50" group having the largest number of companies. The increase in miles of line from 1907 to 1912 is found in the two larger groups, the lower group decreasing 19.86 miles and the "10 and less than 50" group being essentially the same in 1912 and 1907. In 1912 there was no company in Connecticut, Rhode Island, or Utah with less than 10 miles of line; no company in South Dakota, New Mexico, or Nevada with more than 10 miles; no company in Vermont,

North Dakota, Delaware, District of Columbia, North Carolina, Florida, Mississippi, Arkansas, Montana, Arizona, or Wyoming with more than 50 miles; and no company in New Hampshire, Nebraska, Kansas, West Virginia, South Carolina, Kentucky, Tennessee, Alabama, Louisiana, Oklahoma, Texas, Idaho, or Utah with more than 100 miles of line.

The average length of line per company in 1890 was 7.4 miles; in 1902, 20.4 miles; in 1907, 27 miles; and in 1912, 31.2 miles, or more than four times the average in 1890. At the last census there were 59 companies that reported more than 100 miles of line, as compared with 47 in 1907, 25 in 1902, and 2 in 1890. The average length of line for these companies increased from 119.3 miles in 1890 to 174 miles in 1902, 192.8 miles in 1907, and 222.4 miles in 1912.

The 59 companies that operated over 100 miles of line during 1912 include a number that operated more than 500 miles of track. The following statement shows the miles of line and track for the 10 systems reporting the greatest mileages for 1912, ranked according to length of line:

	MILES OF—	
	Line.	Track.
Bay State Street Railway, Massachusetts.....	754.73	941.79
Ohio Electric Railway Co., Ohio.....	601.00	669.10
The Connecticut Co., Connecticut.....	592.80	803.09
Pacific Electric Co., California.....	552.48	970.80
Public Service Railway Co., New Jersey.....	484.90	809.50
Philadelphia Rapid Transit Co., Pennsylvania.....	436.62	649.72
New York State Railways.....	337.05	576.95
Pittsburg Railways Co., Pennsylvania.....	334.58	594.30
Chicago Railways Co., Illinois.....	244.00	515.00
Boston Elevated Railway Co., Massachusetts.....	237.78	500.52

*Increase in trackage and motive power.*—Between 1890 and 1907 the miles of track of street and electric railways increased 26,280.54 miles. During the last five years of this period the increase was 11,826.57 miles, an annual average of 2,365.31 miles. The increase from 1907 to 1912 was 6,715.97 miles, the annual average being 1,343.19 miles. The annual increase computed from a comparison of trackage by years indicates that the greatest development occurred during the year 1906.<sup>1</sup>

<sup>1</sup> The following statement compiled by the Electric Railway Journal shows the total miles of track for each year from 1890 to 1912. The figures for 1890, 1902, and 1907 are not comparable with those obtained by the censuses for those years because there were fewer restrictions in regard to the class of companies included in the statistics presented in the Journal than in the case of those covered by the census. The table, however, shows the years in which the greatest development occurred.

YEAR.	Miles of track.	YEAR.	Miles of track.
1912.....	43,043	1900.....	20,442
1911.....	41,028	1899.....	18,942
1910.....	40,088	1898.....	17,549
1909.....	40,490	1897.....	15,713
1908.....	40,247	1896.....	15,094
1907.....	38,812	1895.....	14,470
1906.....	36,932	1894.....	13,583
1905.....	32,517	1893.....	12,187
1904.....	29,548	1892.....	11,634
1903.....	27,920	1891.....	10,599
1902.....	26,292	1890.....	8,123
1901.....	23,184		

<sup>1</sup> Apparent decrease probably due to some discrepancy in the returns.

Table 4 shows that from 1890 to 1912 the miles of line increased 24,692.38. During each of the periods between the first three censuses the percentage of increase for miles of line was greater than for miles of track, by reason of the fact that a large proportion of the extensions consisted of single-track roads in small towns and rural districts. Since 1907, however, the miles of track have increased slightly more than the miles of line.

The increase in trackage and line has been almost entirely for lines employing electricity as motive power. Except in the case of lines operated by gasoline motor power, which are of but little importance, there has been a rapid decrease in the trackage operated by all other kinds of power. Table 10 shows the number of miles of track operated by each of the several kinds of power, for 1912, 1907, 1902 and 1890.

Table 10 CHARACTER OF POWER.	MILES OF TRACK, BY CHARACTER OF POWER.			
	1912	1907	1902	1890
Total.....	41,064.82	34,381.51	22,576.99	8,123.02
Electric.....	40,808.39	34,037.64	21,901.53	1,261.97
Cable.....	56.41	61.71	240.69	488.31
Animal.....	57.52	136.11	259.10	5,661.44
Steam.....	76.34	105.06	169.61	711.30
Gasoline motors.....	66.16	40.99	16.06	.....
Per cent of total:				
Electric.....	99.4	99.0	97.0	15.5
Cable.....	0.1	0.2	1.1	6.0
Animal.....	0.1	0.4	1.1	69.7
Steam.....	0.2	0.3	0.8	8.8
Gasoline motors.....	0.2	0.1	( <sup>2</sup> )	.....

<sup>1</sup> Compressed air.

<sup>2</sup> Less than one-tenth of 1 per cent.

The table shows conclusively that since 1890 electricity has practically superseded all other kinds of power. The percentage of trackage operated by electric current increased from 15.5 in 1890 to 99.4 in 1912. Animal power was the most important form of power in 1890 (69.7 per cent), while in 1912 it had decreased to one-tenth of 1 per cent. In 1912 gasoline motor cars were operated on 66.16 miles of track, the increase in such mileage having been 61.4 per cent since 1907.

Cable and steam power were never extensively used in the operation of street railways, but they reached their maximum about 1890. The 56.41 miles of cable track reported for 1912 includes 11.70 miles of track reported by 15 companies operating inclined planes, and 44.71 miles of street cable tracks operated by 6 companies. In 1907, 12 companies operated

8.96 miles of inclined-plane cable tracks, and 8 companies 52.75 miles of street cable tracks. Thus during the period 1907-1912 there was an increase in inclined-plane cable trackage of 2.74 miles, and a decrease in street cable trackage of 8.04 miles. The trackage of the Geary Street, Park & Ocean Railroad Co., of San Francisco, which operated 6.93 miles of street cable, is included in the foregoing. Operations of this company were discontinued on May 5, 1912, and the tracks taken up to make way for the municipal road. The municipal line did not begin traffic operations until just before the close of the year (December 24, 1912), and has not been included as an operating road. At the close of the year, therefore, the total cable trackage in operation was 49.48 miles, consisting of 11.70 miles of inclined-plane cable and 37.78 miles of street cable.

*Traffic.*—No distinction as to classes of passengers was made at the census of 1890. Generally, the number reported represented revenue passengers, although in some instances the total of revenue and transfer passengers was reported. It is probable that transfer passengers included were relatively few, and that the total is fairly comparable with the figures for revenue passengers at later censuses. This condition, however, accounts in part for the high average number of revenue passengers per mile of track shown for that year, though it is possible that the proportion of "saturated" trackage in 1890 was greater than in 1902 or 1907, when lines had been built in many communities that could not furnish dense traffic.

It is almost impossible to compile accurate statistics of the territory from which the electric railways of the country draw their traffic. A zone established by an arbitrary radius would be unsatisfactory, and it is impracticable to estimate the population by a personal inspection of the territory traversed by every road or to make a special enumeration for this purpose. Therefore the importance of the electric railways, as indicated by their traffic, can be established in a general way only by comparing, in the case of each geographic division, the number of passengers carried with the total population. Comparisons of this character are given in Table 11.

The Middle Atlantic division ranks first in average number of rides on the basis of total population for each year, and the Pacific division ranks first on the basis of urban population.



## STREET AND ELECTRIC RAILWAYS—RELATION OF TRAFFIC TO POPULATION, BY GEOGRAPHIC DIVISIONS: 1890 TO 1912.

Table 11

Table 11  DIVISION.	Census.	POPULATION.		Number of revenue passengers.	PER CENT OF INCREASE SINCE PRIOR CENSUS.		AVERAGE NUMBER OF REVENUE PASSEN- GERS PER INHABITANT.				
		Total.	Urban (cities of 8,000 and over, includ- ing New England towns).		Population.		Number of re- venue pas- sengers.	Total popula- tion.	Urban popula- tion.	Increase since prior census.	
					Total.	Urban.				Total popula- tion.	Urban popula- tion.
United States.....	1912	95,545,336	37,860,711	9,545,554,667	9.3	24.0	28.3	100	252	15	8
	1907	87,455,366	30,525,532	7,441,114,508	10.2	12.8	55.8	85	244	25	68
	1902	79,365,396	27,072,106	4,774,211,904	25.9	46.2	136.0	61	176	28	67
	1890	63,056,438	18,514,564	2,023,010,202				32	109		
GEOGRAPHIC DIVISIONS:											
New England.....	1912	6,767,513	4,655,256	1,051,161,737	7.7	16.0	20.1	155	226	16	8
	1907	6,281,102	4,013,946	875,115,527	8.4	11.2	36.2	139	218	23	40
	1902	5,794,687	3,610,052	642,546,579	23.1	43.2	210.5	111	178	67	96
	1890	4,708,176	2,521,549	206,907,358				44	82		
Middle Atlantic.....	1912	20,179,371	12,986,304	3,513,720,591	10.7	17.6	23.8	174	271	18	14
	1907	18,224,327	11,041,010	2,839,019,161	12.0	14.7	43.7	156	257	35	52
	1902	16,269,282	9,623,622	1,975,982,220	27.8	43.6	111.5	121	205	48	66
	1890	12,729,124	6,701,026	934,280,102				73	139		
East North Central.....	1912	18,757,149	8,626,244	2,159,620,746	6.5	26.2	34.3	115	250	24	15
	1907	17,610,294	6,834,472	1,607,894,497	7.0	4.4	62.2	91	235	31	84
	1902	16,463,438	6,548,298	991,335,624	22.0	62.5	171.0	60	151	33	60
	1890	13,499,198	4,029,132	365,805,163				27	91		
West North Central.....	1912	11,926,513	3,164,085	787,301,146	5.8	22.6	27.9	66	249	11	10
	1907	11,273,096	2,580,793	615,630,852	6.2	13.2	74.6	55	239	22	84
	1902	10,619,680	2,279,781	352,665,327	18.7	28.0	104.4	33	155	14	53
	1890	8,943,905	1,780,575	172,504,724				19	97		
South Atlantic.....	1912	12,586,562	2,596,840	616,724,741	7.6	23.2	26.4	49	237	7	5
	1907	11,699,773	2,107,591	487,981,528	8.2	12.8	64.2	42	232	15	73
	1902	10,812,980	1,869,031	297,198,541	21.9	31.4	192.4	27	159	16	88
	1890	8,871,135	1,422,231	101,647,174				11	71		
East South Central.....	1912	8,602,701	1,248,541	268,785,533	5.3	31.8	21.7	31	215	4	( <sup>1</sup> )
	1907	8,166,171	946,992	220,887,485	5.6	12.2	87.4	27	233	12	63
	1902	7,729,642	844,036	117,841,573	20.1	39.9	126.5	15	140	7	54
	1890	6,438,475	603,372	52,027,193				8	86		
West South Central.....	1912	9,288,200	1,527,762	270,745,675	14.0	52.3	40.0	29	177	5	( <sup>1</sup> )
	1907	8,147,821	1,003,245	193,338,141	16.3	23.3	109.6	24	193	11	89
	1902	7,007,446	813,396	92,262,288	47.3	43.9	100.7	13	113	3	29
	1890	4,755,911	546,225	45,977,833				10	84		
Mountain.....	1912	2,847,946	717,449	154,224,248	20.6	51.5	36.1	54	215	6	( <sup>1</sup> )
	1907	2,362,446	473,625	113,304,063	25.9	20.3	83.0	48	239	15	82
	1902	1,870,947	393,828	61,908,903	54.1	52.7	127.4	33	157	11	51
	1890	1,217,776	257,836	27,229,937				22	106		
Pacific.....	1912	4,589,381	2,338,230	723,270,250	24.4	53.4	48.2	158	309	26	( <sup>1</sup> )
	1907	3,690,336	1,523,858	437,943,254	32.2	39.8	101.2	132	320	45	98
	1902	2,791,294	1,090,062	242,470,669	47.5	67.0	107.9	87	222	25	43
	1890	1,892,738	652,618	116,630,718				62	179		

<sup>1</sup> Decrease in average number.

*Car mileage.*—The car-mile is another unit by which to measure growth, although it is affected by changes in car capacity. The passenger-car mileage in 1912 amounted to 1,885,870,157, and in 1907 to 1,583,831,199, an increase of 19.1 per cent, as compared with an increase of 41.4 per cent for the 1902–1907 period; but the percentages of increase in number of revenue passengers for the same periods were 28.3 and 55.9, respectively, while the number of revenue passengers per car-mile increased from 4.26 in 1902 to 4.70 in 1907 and 5.06 in 1912.

*Car-hours.*—The car-hour is not employed by all roads, but is much more generally used than formerly. In 1912 car-hour statistics were reported by 899 roads, or 92.2 per cent of the total number, as compared with 734, or 77.7 per cent, in 1907, and 390, or 47.7 per cent, in 1902. The increase in density of traffic from census to census, as shown by the average number of revenue passengers per car-hour, namely, 33.28 in 1902, 43.06 in 1907, and 48.38 in 1912, conforms to the growth in traffic density as measured by car-mile unit and by mile of track.

*Capitalization.*—The statistics of capital stock and funded debt were not fully reported at the census of 1890; in fact, the capitalization and trackage were given for roads controlling only 78.5 per cent of the total mileage. Therefore the figures for that year given in Table 12 are not strictly comparable with those for the three later censuses.

The capitalization of railways includes considerable investments in nonrailway properties. This is especially true of the figures for 1902, 1907, and 1912, which include the capital invested in plants engaged in the generation of electricity for general light and power purposes and in other interests not allied to railway operations. In computing the average capitalization per mile of track, the amounts invested in stock and bonds of other companies, treasury securities, and other permanent investments, have been deducted for 1902, 1907, and 1912, but it is impossible to determine the amount, if any, that should be deducted for 1890. With the exception of those for 1890, the totals include the capitalization for both lessor and operating companies.

Table 12

	CAPITALIZATION: 1890 TO 1912.							
	1912	1907	1902	1890	Per cent of increase.			
					1902-1912	1907-1912	1902-1907	1890-1902
Capitalization.....	\$4,708,568,141	\$3,774,772,096	\$2,308,282,099	\$449,053,669	104.0	24.7	63.5	414.0
Capital stock.....	\$2,379,346,313	\$2,097,708,856	\$1,315,572,960	\$272,441,843	80.9	13.4	59.5	382.9
Funded debt.....	\$2,329,221,828	\$1,677,063,240	\$992,709,139	\$176,611,826	134.6	38.9	68.9	462.1
Investments in stocks and bonds of other companies, treasury securities, and other permanent investments.....	\$465,250,414	\$374,664,197	\$152,513,997	( <sup>1</sup> )	205.1	24.2	145.7	.....
Capitalization less investments.....	\$4,243,317,727	\$3,400,107,899	\$2,155,768,102	.....	96.8	24.8	57.7	.....
Average capitalization less investments:								
Per mile of line.....	<sup>2</sup> 141,484	134,961	130,560	98,848	8.4	4.8	3.4	32.1
Per mile of track.....	<sup>3</sup> 104,930	100,495	96,287	.....	9.0	4.4	4.4	.....

<sup>1</sup> Figures not available.<sup>2</sup> 29,991.42 miles of line represented.<sup>3</sup> 40,439.40 miles of track represented.

Funded debt has formed at each census a proportionately larger part of the capitalization. It does not comprise all of the borrowed capital chargeable to investment, as a large amount of investment capital is represented by short-time notes carried as floating debt, but it is not possible to separate such from other current liabilities. The floating debt reported in 1912 was \$296,161,797, an amount equal to 6.3 per cent of the capitalization, as compared with \$278,927,097, or 7.4 per cent of the capitalization, in 1907.

The period from 1890 to 1902 covered the change of the most of the roads from animal power to elec-

tricity, which accounts for the large increase during this period in capitalization per mile of line and per mile of track. Since 1902 the increase in capitalization per unit has been small and constant.

*Income and expenses.*—The statistics for income and expenses for 1912 cover all companies, but 6 companies in 1907, 18 in 1902, and a considerable number in 1890 did not report these data.

Table 13 shows the revenue constituents of the gross income and the distribution of income by leading items of expenditure for each census from 1890 to 1912, inclusive.

Table 13

	DISTRIBUTION OF GROSS INCOME OF OPERATING COMPANIES.							
	Amount.				Per cent.			
	1912	1907	1902	1890	1912	1907	1902	1890
Gross income of operating companies.....	\$585,930,517	\$429,744,254	\$250,504,627	\$91,721,845	100.0	100.0	100.0	100.0
Operating revenues.....	\$567,511,704	\$418,187,858	\$247,553,999	\$90,617,211	96.8	97.3	98.8	98.8
Passenger.....	502,651,637	382,132,494	233,821,548	89,711,830	85.7	88.9	93.3	97.8
Other.....	64,860,067	36,055,364	13,732,451	905,381	11.1	8.4	5.5	1.0
Income from other sources.....	18,418,813	11,556,396	2,960,628	1,104,634	3.2	2.7	1.2	1.2
Distribution:								
Operating expenses.....	332,896,356	251,309,252	142,312,597	62,011,185	56.8	58.5	56.8	67.6
Deductions.....	191,123,408	138,094,716	77,595,053	13,978,903	32.6	32.1	31.0	15.2
Taxes.....	35,027,965	19,755,602	13,078,899	3,308,190	6.0	4.6	5.2	3.6
Interest on funded and floating debt and mortgages.....	98,025,338	63,740,744	38,085,911	8,086,216	16.7	14.8	15.2	8.8
Rent of leased lines and terminals.....	44,784,521	48,022,596	25,518,225	2,561,343	7.6	11.2	10.2	2.8
Miscellaneous.....	13,285,584	6,575,774	912,018	23,154	2.3	1.5	0.4	( <sup>1</sup> )
Dividends.....	51,650,117	26,454,732	15,882,110	10,180,726	8.8	6.2	6.3	11.1
Miscellaneous payments.....	.....	.....	.....	1,217,193	.....	.....	.....	1.3
Surplus.....	10,260,636	13,885,554	14,714,867	4,333,838	1.8	3.2	5.9	4.8

<sup>1</sup> Less than one-tenth of 1 per cent.

An estimate based on a 5-cent fare per passenger carried in 1890 would increase the operating revenues for that year to the neighborhood of \$100,000,000, as compared with \$247,553,999 in 1902, \$418,187,858 in 1907, and \$567,511,704 in 1912. However, this comparison, like those for practically all of the items shown for the census of 1890 and the later censuses, is indicative rather than exact, as it was apparently impossible to obtain complete reports at the first census of the industry.

There is shown a noticeable increase in operating income other than passenger, due to growth of freight, mail, and express business and the sale of current. The income from passenger service formed 99 per cent of the total income from operation in 1890, but this proportion decreased to 94.5 per cent in 1902, 91.4 per cent in 1907, and 88.6 per cent in 1912. The per-

centage that the income from other sources formed of the gross income was 1.2 in both 1890 and 1902, 2.7 in 1907, and 3.2 in 1912. With the introduction of electric traction during the period 1890-1902 there came a marked drop in the operating ratio, that is, the ratio of operating expenses to operating revenues. This fell from 73.7 per cent for horse roads and 68.4 per cent for all roads in 1890 to 57.5 per cent in 1902. The average operating ratio in 1912 was 58.7 per cent. But offsetting the fall in the operating ratio there was a counterbalancing rise in the ratio for deductions from income, which rose from 15.2 per cent in 1890 to 31 per cent in 1902, and increased slightly at each of the later censuses. The per cent distribution of the fixed charges is given in the next tabular statement, interest ranking first, followed by rentals and then taxes, except in 1890, when taxes exceeded rentals.

	PER CENT DISTRIBUTION OF FIXED CHARGES.			
	1912	1907	1902	1890
Total.....	100.0	100.0	100.0	100.0
Taxes.....	18.3	14.3	16.8	23.7
Interest.....	51.3	46.1	49.1	57.8
Rentals.....	23.4	34.8	32.9	18.3
Miscellaneous.....	7.0	4.8	1.2	0.2

After 1907 there was a decrease, both actual and proportionate, in rentals for leased lines and terminals, though prior to 1907 there had been a progressive increase in this item of expense. In harmony therewith there was a decrease in number of lessor companies from 1907 to 1912, and an increase for the period prior thereto, although the leased mileage shows an increase from 1907 to 1912 as well as for the prior periods.

Table 14 shows the percentage of income absorbed by invested capital and that consumed by expense other than that representing return on capital investment. Returns on invested capital include dividends, interest paid on funded debt, etc., and rentals paid for leased lines and terminals, which are disbursed by the lessor companies to their stock and bond holders.

**Table 14**

	PER CENT DISTRIBUTION OF INCOME BETWEEN EXPENSES AND INVESTED CAPITAL.			
	1912	1907	1902	1890
Gross income of operating companies.....	100.0	100.0	100.0	100.0
Expenses other than interest and rentals.....	65.1	64.6	62.4	72.5
Operating expense.....	56.8	58.5	56.8	67.6
Other expenses.....	8.3	6.1	5.6	4.9
Returns on invested capital.....	33.1	32.2	31.7	22.7
As interest on funded and floating debt and mortgages.....	16.7	14.8	15.2	8.8
As rent of leased lines and terminals.....	7.6	11.2	10.2	2.8
As dividends.....	8.8	6.2	6.3	11.1
Surplus.....	1.8	3.2	5.9	4.8

Although the percentages for the subitems fluctuate somewhat for the different years, the group percentages have a uniform trend.

**Employees.**—The number of wage earners employed on September 16, 1912, was taken as representing under general conditions an average of the number required to operate the railway systems. At the prior censuses the numbers reported by the companies were their estimates of the average numbers employed during the year. The number of salaried employees was not fully reported in 1890. At the census of 1902, 20 companies operating 417.03 miles of track, and in 1907, 6 companies, with 292.95 miles of track, failed to report the number of employees.

The average number of revenue passengers carried per employee, in 1912, 1907, and 1902, varied but little, although there was a marked increase in the number of salaried employees as compared with that of wage earners for the period 1907–1912. This may be due in part to the inclusion under salaried employees in 1912 of certain classes of men reported as wage earners in 1907.

In 1907 the schedule specified the various classes of employees to be reported as wage earners, namely,

foremen, inspectors, starters, dynamo and switch-board men, engineers, electricians (skilled), etc., as well as conductors and motormen, but the schedule for 1912 only asked under this heading for conductors, motormen, and all other wage earners. On the basis of conductors and motormen employed, the average number of revenue passengers shows a steady increase. The averages are shown in the following tabular statement:

CENSUS.	AVERAGE NUMBER OF REVENUE PASSENGERS.		PER CENT OF INCREASE. <sup>1</sup>	
	Per employee.	Per conductor and motorman.	Per employee.	Per conductor and motorman.
1912.....	33,794	72,689	0.6	12.8
1907.....	33,605	64,415	—0.9	8.1
1902.....	33,915	59,570		

<sup>1</sup> A minus sign (—) denotes decrease.

The following diagrams and maps illustrate graphically certain of the statistics for the years 1912, 1907, and 1902. Diagram 1 shows the miles of track by states, excluding states with less than 100 miles of track in 1912. The data upon which this diagram is based are given in Table 153 (p. 282).

DIAGRAM 1.—MILES OF TRACK, BY STATES: 1912, 1907, AND 1902.

[States with 100 miles of track in 1912—Based upon net trackage in states.]

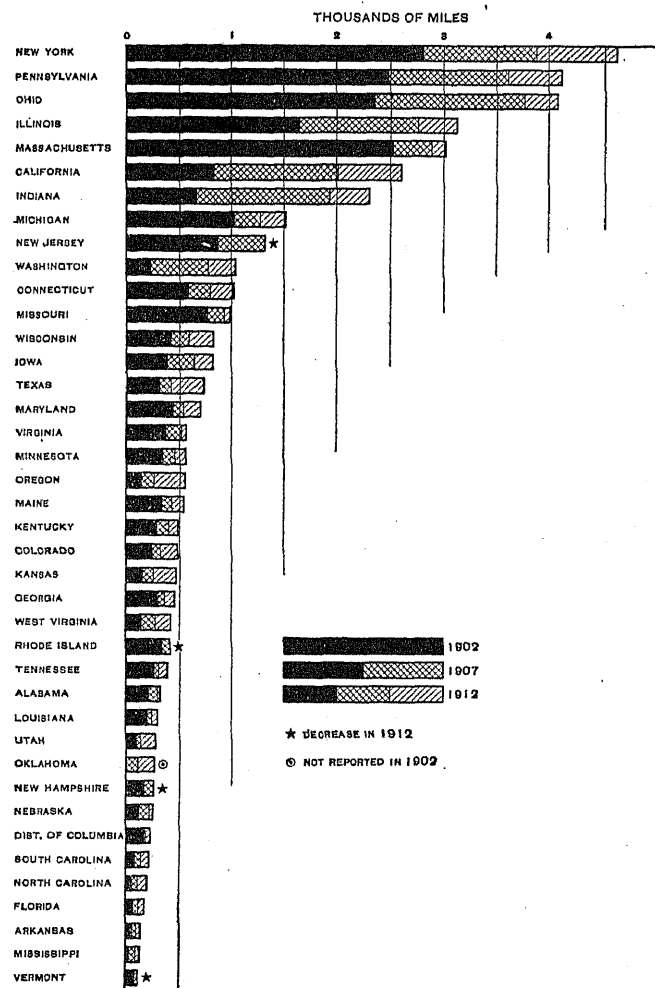


Diagram 2 shows the number of revenue passengers by states, excluding states having less than 20,000,000 revenue passengers in 1912. The data upon which this diagram is based are given in Table 156 (p. 292).

DIAGRAM 2.—NUMBER OF REVENUE PASSENGERS, BY STATES: 1912, 1907, AND 1902.

[States with 20,000,000 revenue passengers in 1912—Based on total for companies credited to the several states.]

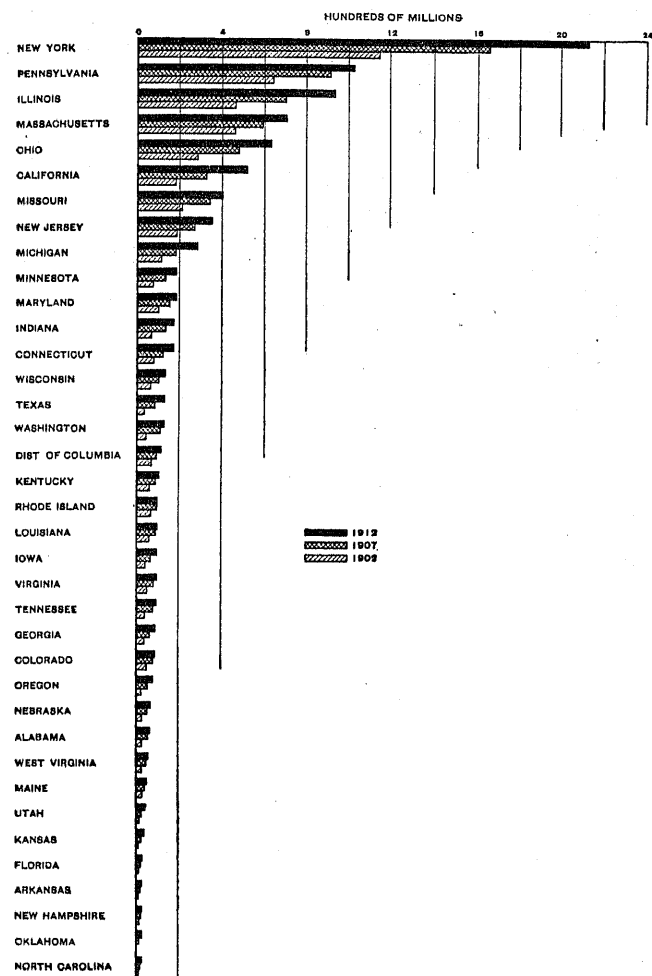


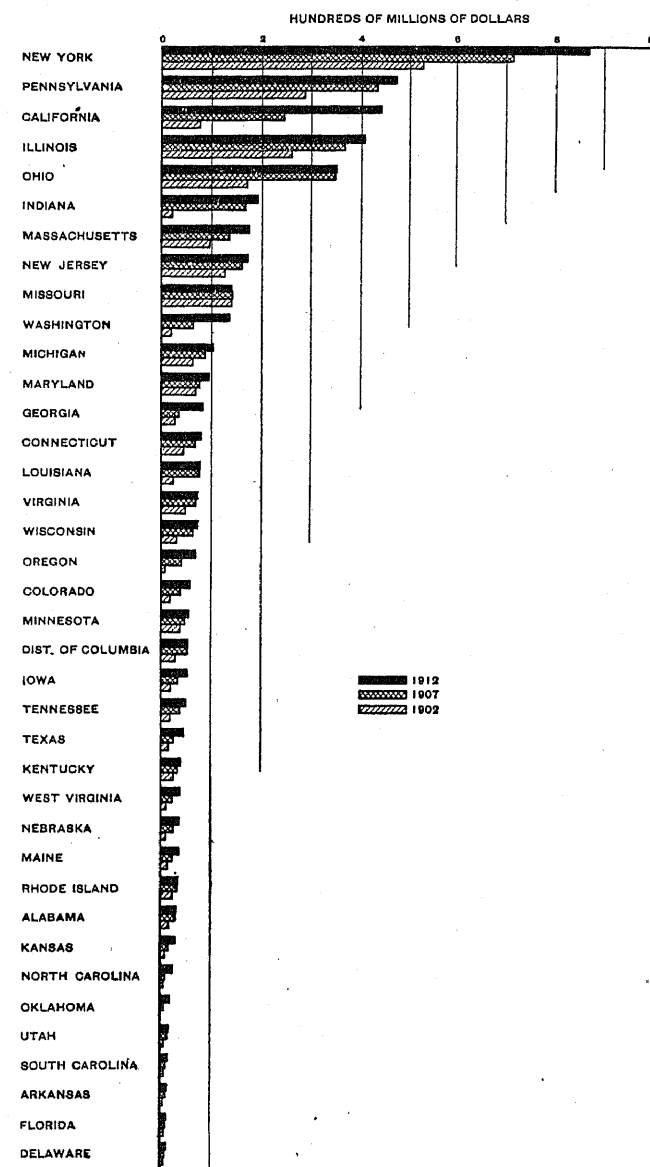
Diagram 3 shows the capitalization of all companies by states, excluding states having less than \$10,000,000 of capitalization in 1912. The data upon which this diagram is based are given in Table 157 (p. 299).

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The maps show the average number of revenue passengers per inhabitant, by geographic divisions, for 1912, 1907, 1902, and 1890. The data upon which the maps are based are given in Table 11 (p. 190).

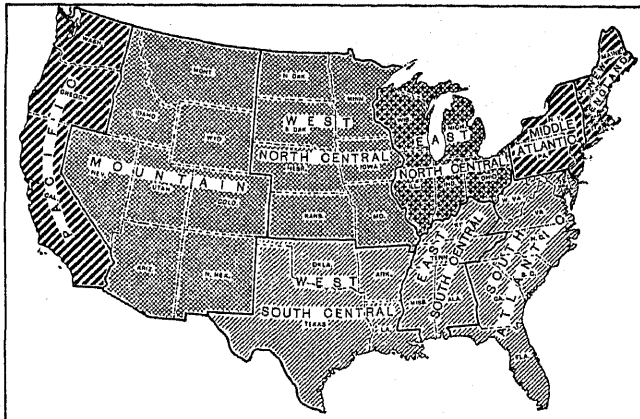
DIAGRAM 3.—CAPITALIZATION OUTSTANDING OF OPERATING AND LESSOR COMPANIES COMBINED, BY STATES: 1912, 1907, AND 1902.

[States with \$10,000,000 of outstanding capitalization in 1912.]



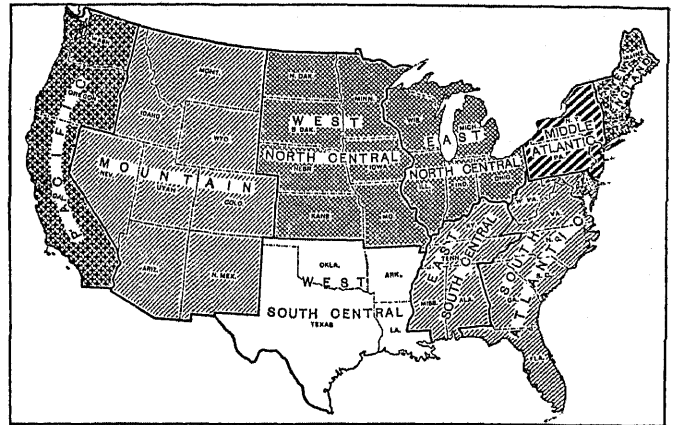
MAPS SHOWING AVERAGE NUMBER OF REVENUE PASSENGERS PER INHABITANT, BY GEOGRAPHIC DIVISIONS:  
1912, 1907, 1902, AND 1890.

1912



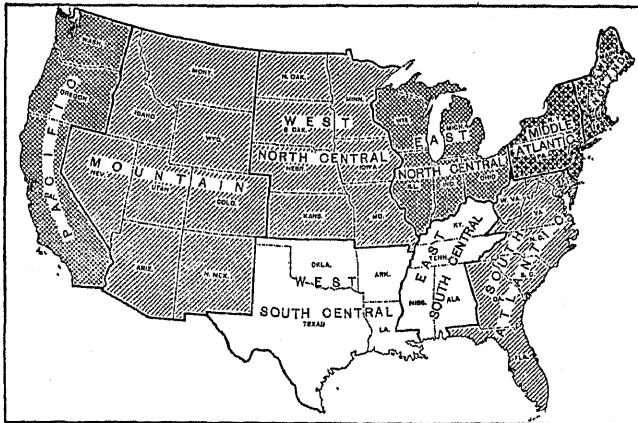
LESS THAN 25 25 TO 50 50 TO 100 100 TO 150 150 AND OVER

1907



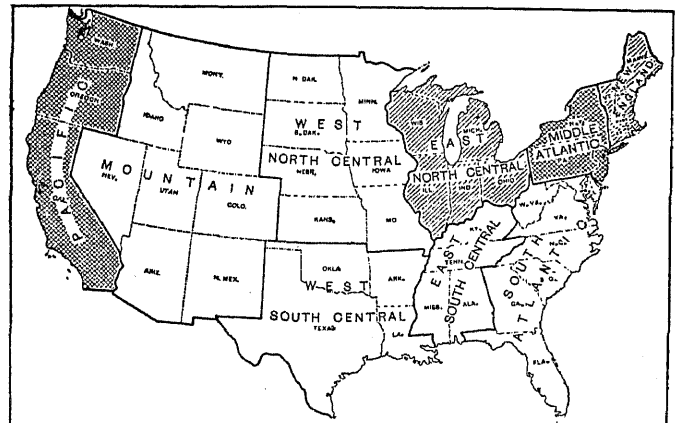
LESS THAN 25 25 TO 50 50 TO 100 100 TO 150 150 AND OVER

1902



LESS THAN 25 25 TO 50 50 TO 100 100 TO 150 150 AND OVER

1890



LESS THAN 25 25 TO 50 50 TO 100 100 TO 150 150 AND OVER

## CHAPTER III.

### POWER EQUIPMENT AND OUTPUT OF STATIONS.

Traffic and financial operations are, perhaps, the more important features of the railway industry, but the physical equipment of the roads naturally takes precedence. The power plant is the primary equipment unit, and statistics concerning it will be presented in advance of those for track and rolling stock. The following discussion considers the data for all companies, the comparison of statistics being confined to the years 1912, 1907, and 1902 because in 1890 there were comparatively few electric roads in operation and the information concerning them was not complete.

The following table shows the number of companies using the several kinds of power in 1912:

KIND OF POWER.	NUMBER OF COMPANIES, CLASSIFIED ACCORDING TO KIND OF POWER: 1912.		
	Total for each kind.	Kind indi- cated, ex- clusively.	Mixed power— electric and other kind.
Electric.....	<sup>1</sup> 943	<sup>1</sup> 925	<sup>2</sup> 18
Cable.....	<sup>2</sup> 21	13	8
Animal.....	<sup>3</sup> 13	9	4
Gasoline motor.....	9	8	1
Steam.....	9	1	8

<sup>1</sup> Includes one gas-electric.

<sup>2</sup> Total number of companies with mixed power—electric and other kinds.

<sup>3</sup> One company part cable and part animal.

Electricity was used wholly or in part by 943 companies, or 96.7 per cent of the total number, in 1912, as compared with 904, or 95.7 per cent, in 1907. In 1912, however, the majority of the companies did not operate power plants but purchased power, while in 1907, 57 per cent of the companies operated power plants, and in 1902, 66.6 per cent.

Table 16 shows the number of companies with and without power plants, classified according to kind of motive power.

In 1912, 31 companies having power equipment reported that it was not operated during 1912, current having been purchased from central stations or other railway companies. The idle equipment is included in the general tables for power equipment, but the number of companies with power plants in Table 16 refers to operated plants. In 1907, 37 companies had idle equipment and in 1902, 33 companies.

**Table 16**

CHARACTER OF POWER.	COMPANIES WITH AND WITH- OUT POWER PLANT EQUIP- MENT, CLASSIFIED ACCORD- ING TO CHARACTER OF POWER.		
	1912	1907	1902
Total number.....	975	945	817
With operated power plants.....	463	539	544
Electric exclusively.....	440	518	511
Current generated.....	441	515	498
Steam power rented, current generated.....	5	3	13
Electric and other power.....	11	14	20
Cable exclusively.....	6	7	<sup>1</sup> 13
Without operated power plants.....	512	406	273
Electric current purchased.....	485	371	216
Electric exclusively.....	477	<sup>3</sup> 363	<sup>3</sup> 210
Electric and other power.....	8	8	6
Gas-electric motors exclusively.....	1	1	-----
Gasoline motors exclusively.....	8	5	-----
Cable exclusively, power rented.....	8	3	1
Animal exclusively.....	9	23	53
Steam exclusively.....	1	3	3
Per cent of total.....	100.0	100.0	100.0
With power plants.....	47.5	57.0	66.6
Electric exclusively.....	45.7	54.8	62.5
All other.....	1.8	2.2	4.1
Without power plants.....	52.5	43.0	33.4
Electric current purchased.....	49.7	39.3	26.4
All other.....	2.8	3.7	7.0

<sup>1</sup> Includes 1 company using cable and other than electric power, and 1 using compressed air.

<sup>2</sup> Includes 31 companies in 1912, 37 in 1907, and 33 in 1902 with idle power plants, current purchased.

<sup>3</sup> Includes 1 company operating with storage batteries.

Table 17 shows, for 1912, 1907, and 1902, the number of companies having power plants, including idle equipment; the number, kind, and capacity of the primary power units of the electric generators or dynamos, and of the various units comprised in the subsidiary apparatus; the quantity of current generated and purchased; and the percentages of increase for the census periods.

In 1912, 50.8 per cent of the street and electric railways had their own power-plant equipment, as compared with 61 per cent in 1907 and 70.6 per cent in 1902; or, in other words, the number of operating companies without power plants has increased from 240, or 29.4 per cent of the total number in 1902, to 480, or 49.2 per cent of the total number in 1912.

The statistics for the equipment of roads operated by power supplied from central power plants in 1890 were not complete, although 358 steam engines with 79,387 horsepower were returned, the larger portion thereof being reported as used in the operation of cable systems.

## STREET AND ELECTRIC RAILWAYS—POWER-PLANT EQUIPMENT AND OUTPUT OF STATIONS.

Table 17	1912	1907	1902 <sup>1</sup>	PER CENT OF INCREASE, <sup>2</sup>		
				1902-1912	1907-1912	1902-1907
Number of operating companies.....	975	945	817	19.3	3.2	15.7
Number of companies with power-plant equipment.....	495	576	577	-14.2	-14.1	-0.2
Primary power:						
Number of units.....	2,695	3,637	2,811	-4.1	-25.9	29.4
Horsepower.....	3,665,051	2,519,823	1,359,285	169.6	45.4	85.4
Steam power:						
Number of units.....	2,264	3,368	2,637	-14.2	-32.8	27.7
Horsepower.....	3,169,554	2,411,527	1,308,207	142.3	31.4	84.3
Engines.....	1,802	3,116	( <sup>3</sup> )	-----	-42.2	-----
Horsepower.....	1,706,754	1,876,123	( <sup>3</sup> )	-----	-9.0	-----
Turbines.....	462	252	( <sup>3</sup> )	-----	83.3	-----
Horsepower.....	1,462,800	535,404	( <sup>3</sup> )	-----	173.2	-----
Gas and oil engines—						
Number.....	48	41	15	220.0	17.1	173.3
Horsepower.....	24,190	16,335	1,925	1,156.6	48.1	748.6
Water wheels and turbines—						
Number.....	383	228	150	140.9	68.0	43.4
Horsepower.....	471,307	91,961	49,153	858.9	412.5	87.1
Dynamos:						
Number.....	2,797	3,124	3,302	-15.3	-10.5	-5.4
Kilowatt capacity.....	2,508,066	1,723,416	898,362	179.2	45.5	91.8
Direct current—						
Number.....	1,642	2,192	2,861	-42.6	-25.1	-23.4
Kilowatt capacity.....	769,875	941,502	725,346	6.1	-18.2	29.8
Alternating and polyphase current—						
Number.....	1,155	932	441	161.9	23.9	111.3
Kilowatt capacity.....	1,738,191	781,914	173,016	904.6	122.3	351.9
Subsidiary equipment:						
Rotary converters and motor generator sets—						
Number.....	2,840	1,862	4,441	544.0	52.5	322.2
Kilowatt capacity.....	1,637,260	942,232	160,053	922.9	73.8	488.7
Boosters—						
Number.....	183	134	104	76.0	36.6	28.8
Kilowatt capacity.....	24,807	17,046	13,666	81.5	45.5	24.7
Transformers—						
Number.....	8,436	5,274	1,657	409.1	60.0	218.3
Kilowatt capacity.....	2,357,397	1,133,161	212,569	1,009.0	108.0	433.1
Auxiliary generators—						
Number.....	144	311	771	102.8	-53.7	338.0
Kilowatt capacity.....	12,227	19,152	3,763	224.9	-36.2	409.0
Output of stations and current purchased, kilowatt hours:						
Generated.....	6,052,699,008	4,759,130,100	2,261,484,397	167.6	27.2	110.4
Purchased.....	2,967,318,781	( <sup>4</sup> )	( <sup>5</sup> )	-----	-----	-----

<sup>1</sup> Totals do not include 1 electric motor of 150 horsepower reported as primary power.

<sup>2</sup> A minus sign (—) denotes decrease.

<sup>3</sup> Not reported separately.

<sup>4</sup> Exclusive of 8 rotary converters for which capacity was not reported.

<sup>5</sup> Exclusive of 3 boosters for which capacity was not reported.

<sup>6</sup> Exclusive of 23 transformers for which capacity was not reported.

<sup>7</sup> Exclusive of 1 auxiliary generator for which capacity was not reported.

<sup>8</sup> Figures not available.

The aggregate capacity of all primary motive power reported by the street and electric railways increased during the decade 1902-1912 from 1,359,285 to 3,665,051 horsepower, or 169.6 per cent, and the capacity of the electric generators or dynamos from 898,362 to 2,508,066 kilowatts, or 179.2 per cent. The capacity of all dynamos reduced to horsepower was equal to 91.2 per cent of the capacity of the primary power equipment in 1912, as compared with the same ratio in 1907 and 88.1 per cent in 1902. This comparison, however, is only approximate, as not all of the primary power is employed for electric generation.

Table 18 gives the average indicated capacity of all classes of power units for 1912, 1907, and 1902:

Table 18	KIND.	AVERAGE INDICATED POWER CAPACITY PER UNIT.		
		1912	1907	1902
Primary power, all units (horsepower).....		1,360	693	484
Steam power.....		1,400	716	496
Engines.....		947	602	-----
Turbines.....		3,169	2,125	-----
Gas and oil engines.....		504	308	128
Water wheels and turbines.....		1,231	403	309
Dynamos (kilowatts).....		897	552	272
Direct current.....		469	430	254
Alternating or polyphase current.....		1,505	839	392

The number and horsepower of auxiliary engines were not reported separately in 1912, and those reported in 1907 and 1902 have been treated as steam engines for comparative purposes. The average horsepower per steam unit increased from 496 in 1902 to 1,400 in 1912. The horsepower of steam engines shows a marked decrease, the development of steam power being confined to the installation of large turbines. Steam turbines were not reported separately in 1902, but in 1907 they averaged 2,125 horsepower per unit and in 1912, 3,166. The development of the larger stations is further shown by the figures for water wheels and turbines, the average size of which increased from 309 horsepower in 1902 to 1,231 in 1912. Dynamos increased in kilowatt capacity more than threefold during the 10-year period, almost all of the increase being in alternating and polyphase current generators.

Table 19 shows the per cent distribution of power, by kind, for the three census years.

A marked feature is the growth in steam turbines, in water power, and in alternating and polyphase current dynamos. There were few, if any, steam turbines in 1902 and they were not reported separately.

rately, but from 1907 to 1912 the horsepower of the steam turbines increased 173.2 per cent and the horsepower of the water wheels and turbines 412.5 per cent. The increase for the decade 1902-1912 in water power was from 49,153 horsepower to 471,307 horsepower, or more than eightfold, and in alternating and polyphase current dynamos, from 173,016 kilowatts to 1,738,191 kilowatts, or more than ninefold.

The growth in subsidiary or substation equipment, under which heading is included all equipment for manipulating current, whether in the main station or at outside points, has been in keeping with the growth in power. The increase in capacity of the alternating and polyphase current dynamos during the period 1902-1912 was 905 per cent, the increase in capacity of rotary converters and motor generator sets 923 per cent, and in capacity of transformers a little over 1,000 per cent.

The rapid extension of the use of large power units is evidenced by the statistics given in Table 20, which shows the total number of units and the total primary power for the United States, and the number and horsepower of steam engines and turbines, gas and oil engines, and water wheels and turbines, grouped according to the indicated horsepower of the separate machines. These data cover the three censuses, 1912, 1907, and 1902, and include the percentages of increase for the two periods and the decade.

Table 19

KIND.	PER CENT DISTRIBUTION OF TOTAL INDICATED POWER CAPACITY.		
	1912	1907	1902
Primary power.....	100.0	100.0	100.0
Steam power.....	88.5	95.7	96.2
Engines.....	46.6	74.5	.....
Turbines.....	39.9	21.2	.....
Gas and oil engines.....	0.7	0.1	0.1
Water wheels and turbines.....	12.9	3.6	3.6
Dynamos.....	100.0	100.0	100.0
Direct current.....	30.7	54.6	80.7
Alternating and polyphase current.....	69.3	45.4	19.3

Table 20

KIND.	PRIMARY POWER, MACHINES, NUMBER, KIND, AND HORSEPOWER: 1912, 1907, AND 1902.									
	Number of units.	Total horse- power.	Power units grouped according to horsepower.							
			500 horsepower or under.		Over 500 and under 2,000 horsepower.		2,000 and under 5,000 horsepower.		5,000 horsepower and over.	
			Number.	Horse- power.	Number.	Horse- power.	Number.	Horse- power.	Number.	Horse- power.
Total:										
1912.....	2,695	3,665,051	1,162	333,374	1,039	1,047,001	346	960,281	148	1,324,395
1907.....	13,637	12,519,823	12,348	1,464,217	970	933,480	250	699,926	69	422,200
1902.....	2,811	2,135,928	2,034	2,455,503	777	903,872	(*)	(*)	(*)	(*)
Steam power:										
1912.....	2,264	3,169,554	925	272,892	907	915,186	312	871,281	120	1,110,195
1907.....	13,368	12,411,527	12,142	1,423,019	910	874,682	247	691,626	69	422,200
1902.....	2,637	2,130,820	2,180	2,431,125	747	877,082	(*)	(*)	(*)	(*)
Engines—										
1912.....	1,802	1,706,754	892	264,628	704	697,017	167	432,859	39	312,250
1907.....	13,116	11,876,123	12,119	1,419,231	789	755,404	162	458,488	46	243,000
Turbines—										
1912.....	462	1,462,800	33	8,264	203	218,169	145	438,422	81	797,945
1907.....	1,252	535,404	23	3,788	121	119,278	85	233,138	23	179,200
Gas and oil engines:										
1912.....	48	24,190	32	8,390	13	8,800	3	7,000	.....	.....
1907.....	41	16,335	34	8,435	5	2,900	2	5,000	.....	.....
1902.....	15	1,925	15	1,925	.....	.....	.....	.....	.....	.....
Water wheels and turbines:										
1912.....	383	471,307	205	52,092	119	123,015	31	82,000	28	214,200
1907.....	228	91,961	172	32,763	55	55,898	1	3,300	.....	.....
1902.....	159	49,153	129	22,453	30	26,700	.....	.....	.....	.....
PER CENT OF INCREASE. <sup>5</sup>										
Total:										
1902 to 1912.....	-4.1	169.6	-42.9	-26.8	33.7	15.8	.....	.....	.....	.....
1907 to 1912.....	-25.9	45.4	-50.5	-28.2	7.1	12.2	38.4	37.2	114.5	213.7
1902 to 1907.....	29.4	85.4	15.4	1.9	24.8	3.3	.....	.....	.....	.....
Steam power:										
1902 to 1912.....	-14.1	142.3	-51.1	-36.7	21.4	4.3	.....	.....	.....	.....
1907 to 1912.....	-32.8	81.4	-56.8	-35.5	-0.3	4.6	26.3	26.0	73.9	163.0
1902 to 1907.....	27.7	84.3	13.3	-1.9	21.8	-0.3	.....	.....	.....	.....
Engines—										
1907 to 1912.....	-42.2	-9.0	-57.9	-36.9	-10.8	-7.7	3.1	-5.6	-15.2	28.5
Turbines—										
1907 to 1912.....	83.3	173.2	43.5	118.2	67.8	82.9	70.6	88.1	252.2	345.3
Gas and oil engines:										
1902 to 1912.....	220.0	1,156.6	113.3	335.8	.....	.....	.....	.....	.....	.....
1907 to 1912.....	17.1	48.1	-5.9	-0.5	160.0	203.4	50.0	40.0	.....	.....
1902 to 1907.....	173.3	748.6	126.7	338.2	.....	.....	.....	.....	.....	.....
Water wheels and turbines:										
1902 to 1912.....	140.9	858.9	58.9	132.0	296.7	360.7	.....	.....	.....	.....
1907 to 1912.....	68.0	412.5	19.2	59.0	116.4	120.1	.....	.....	.....	.....
1902 to 1907.....	43.4	87.1	33.3	45.9	83.3	109.4	.....	.....	.....	.....

<sup>1</sup> Includes 857 units of 43,344 horsepower reported as auxiliary engines.

<sup>2</sup> Includes 301 units of 10,074 horsepower reported as auxiliary steam engines.

<sup>3</sup> Included in "500 and under 2,000 horsepower;" engines over 2,000 horsepower not reported separately in 1902.

<sup>4</sup> Steam turbines included with steam engines in 1902.

<sup>5</sup> A minus sign (-) denotes decrease.



In 1912, 62.3 per cent of the power was in units of 2,000 horsepower or over, compared with 44.5 per cent in 1907.

Steam is the predominating primary power, although the number of companies using steam power has decreased and the number using water power and internal-combustion engines has increased. Table 21 shows the number of companies with power plants classified according to kind of primary power for 1912, 1907, and 1902.

KIND.	COMPANIES CLASSIFIED ACCORDING TO KIND OF PRIMARY POWER EQUIPMENT (NUMBER).		
	1912	1907	1902
Total number with power plants.....	495	576	577
Steam exclusively.....	425	476	500
Water exclusively.....	6	8	6
Gas exclusively.....	9	8	3
Steam and water.....	46	39	32
Steam and gas.....	8	8	3
Steam, water, and gas.....	1		
Total number using—			
Steam.....	480	523	535
Water.....	53	47	38
Gas.....	18	16	6

The presence of mixed equipment does not necessarily mean that more than one kind of power is ordinarily used. One may be held in reserve, particularly in the case of water power along with steam or gas.

Table 22 shows the power and output of stations for all companies, classified according to income from railway operations, for 1912, 1907, and 1902.

Companies of class A (those having an income of \$1,000,000 and over from railway operations) constituted 9.3 per cent of all companies in 1912, as compared with 5.4 per cent in 1902, and companies of class B (those having an income from railway operations of \$250,000 but less than \$1,000,000) 15.9 per cent in 1912, as compared with 10.4 per cent in 1902, while companies of class C (those having an income less than \$250,000 from railway operations) constituted 74.8 per cent in 1912, as compared with 84.2 per cent in 1902. Of the total number of operating companies in 1912, 50.8 per cent generated power, but for class A the ratio was 90.1 per cent, as compared with 64.5 per cent for class B and 42.9 per cent for class C.

Nearly three-fifths (58.9 per cent) of the water power was reported by companies of class A for 1912, as compared with 14.9 per cent for 1907 and 22.1 per cent for 1902, while class C reported 63.3 per cent of the water power for 1907 and 75.1 per cent for 1902. The lower group, or class C, shows the largest amount of gas power in all three years—37.7 per cent in 1912, 54.8 per cent in 1907, and 79.2 per cent in 1902.

Table 151 (p. 278) gives the statistics for primary power, by geographic divisions and states, for 1912.

Table 22	POWER AND OUTPUT OF STATIONS FOR COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: 1912, 1907, AND 1902.										
	CLASSIFICATION GROUP.	Number of operating companies.	Number of companies with power plants.	Primary horsepower.				Dynamos—kilowatt capacity.			Output of stations—kilowatt hours.
				Total.	Steam engines and turbines.	Gas and oil engines.	Water wheels and turbines.	Total.	Direct current.	Alternating and poly-phase current.	
Total:											
1912.....	975	495	3,665,051	3,169,554	24,100	471,307	2,508,066	789,875	1,738,191	6,052,699,008	
1907.....	945	576	2,476,479	2,368,183	16,335	91,961	1,723,416	941,502	781,914	4,759,130,100	
1902.....	817	577	1,349,211	1,298,133	1,925	49,153	898,362	725,346	173,016	2,261,484,397	
Class A—\$1,000,000 and over:											
1912.....	91	82	2,573,122	2,288,643	6,790	277,689	1,739,980	497,667	1,242,313	3,559,068,286	
1907.....	77	(1)	1,596,880	1,577,444	5,740	13,696	1,096,101	607,191	488,910	3,491,483,244	
1902.....	44	(1)	736,832	725,560	400	10,872	477,101	393,926	83,630	1,421,910,468	
Class B—\$250,000 but less than \$1,000,000:											
1912.....	155	100	595,892	474,198	8,290	113,404	416,959	137,157	279,802	945,257,949	
1907.....	132	(1)	382,514	360,844	1,650	20,020	268,659	140,364	128,295	662,994,538	
1902.....	85	(1)	224,293	222,948	-----	1,345	154,069	129,769	24,300	406,944,956	
Class C—less than \$250,000:											
1912.....	729	313	496,037	406,713	9,110	80,214	351,127	135,051	216,076	1,548,372,773	
1907.....	736	(1)	497,085	429,895	8,945	58,245	358,656	193,947	164,709	604,652,318	
1902.....	638	(1)	388,086	349,625	1,525	36,936	266,737	201,651	65,086	432,628,973	

<sup>1</sup> Figures not available.

There were 2,695 primary power units reported for street and electric railways. Of this number, 2,264 were steam units (1,802 engines and 462 turbines); 48, gas or oil engines; and 383, water wheels.

The distribution of the number of primary power units and indicated horsepower according to size of units has been given in Table 20 in connection with similar statistics for prior censuses.

The steam turbine is an interesting feature of the power equipment. This type of steam engine represented in 1912 nearly 40 per cent of the primary power

and 60 per cent of the power developed by units of 5,000 horsepower and over.

Table 152 (p. 280) gives in detail the statistics relating to electric generating and subsidiary or substation equipment, including output of stations and quantity of current generated in 1912, by geographic divisions and states.

The dynamoes aggregated 2,797 in number, with a capacity rating of 2,508,066 kilowatts. Of these, 58.7 per cent in number and 30.7 per cent in capacity were direct-current, and 41.3 per cent in number and 69.3

per cent in capacity were alternating- or polyphase-current machines.

The 6,052,699,008 kilowatt hours of current generated is equal to the output of the entire equipment at rated capacity for an average of 6.6 hours per day for the year. More or less current was purchased in every state, and in South Dakota, New Mexico, Idaho, Wyoming, and Nevada all current was purchased.

The 2,967,318,781 kilowatt hours of current purchased includes intercompany sales of current as well as current purchased from central electric power stations; hence the aggregate of current generated and current purchased includes some duplication, the amount of which it is impossible to determine. The amount

paid for purchased power was \$24,546,530, which indicates an average cost of approximately 0.83 cent per kilowatt hour. The operating power expense reported by the railway companies indicates an operative cost of production for current generated of approximately 0.59 cent per kilowatt hour.

On account of the mixed railway and light and power operations of many companies, operating ratios involving cost of current consumption can not be deduced from the returns as a whole, but Table 23 presents statistics derived from the reports of 130 companies that neither bought nor sold current in 1912, in comparison with ratios based upon the reports of 176 similar companies in 1907.

Table 23

ELECTRIC RAILWAYS THAT NEITHER BOUGHT NOR SOLD CURRENT: MILES OF TRACK, POWER, PASSENGERS CARRIED, AND CAR MILEAGE, 1912, AND OPERATING RATIOS, 1912 AND 1907.

	United States	Massachusetts and Connecticut.	New York, New Jersey, and Pennsylvania.	Illinois, Indiana, Ohio, and Wisconsin.	All other states. <sup>1</sup>
Number of companies.....	130	10	51	26	43
Miles of track.....	4,276.98	274.93	1,828.88	1,047.51	1,125.66
Power:					
Primary horsepower.....	727,826	13,540	505,014	128,130	81,142
Dynamios (kilowatt capacity).....	509,720	9,210	351,259	90,083	59,168
Output of stations (kilowatt hours).....	1,258,241,204	19,951,180	960,112,531	151,884,498	128,292,995
Cost of operating power plants.....	\$6,881,819	\$225,445	\$4,664,807	\$952,696	\$1,038,871
Passengers carried:					
Total.....	1,876,179,388	31,844,689	1,388,124,889	201,864,591	254,345,219
Revenue.....	1,613,112,449	29,425,674	1,226,283,661	153,850,623	203,552,491
Transfer.....	253,672,918	2,365,467	157,839,890	46,063,700	47,403,861
Free.....	9,394,021	53,548	4,001,338	1,950,268	8,888,867
Revenue car mileage:					
Total.....	331,082,917	6,173,738	247,816,231	34,143,394	42,949,554
Passenger.....	328,505,324	6,070,935	246,539,177	33,358,643	42,636,569
Express, mail, and freight.....	2,577,593	102,803	1,277,054	784,751	412,985
Operating ratios: <sup>2</sup>					
Revenue passengers—					
Per mile of track—					
1912.....	377,162	107,030	670,511	146,873	180,829
1907.....	268,050	86,860	363,570	202,226	246,979
Per passenger-car-mile—					
1912.....	4.91	4.85	4.97	4.61	4.79
1907.....	4.92	4.34	5.12	4.39	5.02
Kilowatt consumption per car-mile—					
1912.....	3.80	3.23	3.87	4.45	2.94
1907.....	3.26	3.10	3.39	3.08	3.21
Cost of current per kilowatt hour (cents)—					
1912.....	0.55	1.13	0.49	0.63	0.82
1907.....	0.65	1.13	0.58	0.68	0.72

<sup>1</sup> Includes companies as follows: Alabama, 1; Arkansas, 1; California, 2; Colorado, 1; Delaware, 1; District of Columbia, 1; Florida, 2; Iowa, 1; Kansas, 3; Kentucky, 2; Louisiana, 3; Maryland, 2; Michigan, 2; Missouri, 3; Montana, 1; New Hampshire, 1; North Carolina, 1; North Dakota, 1; Oklahoma, 2; Tennessee, 1; Texas, 4; Vermont, 2; Virginia, 2; and West Virginia, 3.

<sup>2</sup> Operating ratios for 1907 are based upon returns for 176 companies with 7,341.73 miles of track.

Ratio deductions must necessarily be of a general character, as even the companies that did railway business solely and neither bought nor sold current are not on equal footing in regard to current consumption.

The lighting and heating of cars is now chiefly electric, though in earlier years other methods were largely used, but the consumption of current for car heating is, of course, proportionately greatest in the northern districts.

The companies represented by the statistics in 1912 and 1907 are not in all cases the same, and the density of traffic measured by the number of revenue passengers per mile of track shows marked variations, due to the inclusion or exclusion in 1912 or 1907, as the case may be, of companies operating in thickly settled districts; but the resulting ratios of revenue passengers per passenger-car-mile, kilowatt consumption per car-mile, and cost of current per kilowatt hour show but slight changes for the two years.

# CHAPTER IV.

## TRACK AND ROLLING STOCK.

### TRACK.

The track operated by the companies embraced in the census of street and electric railways includes not only the first, second, and other main tracks, but also sidings, turnouts, and track in car barns, storage yards, etc. The length of these various kinds of track, in single-track miles, amounted to 41,064.82 miles in 1912, as compared with 34,403.56

miles in 1907 and 22,572.52 miles in 1902. The increase from 1902 to 1912 amounted to 18,492.30 miles, or 81.9 per cent.

Table 153 (p. 282) gives the statistics in detail for track mileage, by geographic divisions and states, for 1912, 1907, and 1902.

Table 24 gives, for the United States, the statistics pertaining to operated trackage for 1912, 1907, and 1902, with percentages of increase.

STREET AND ELECTRIC RAILWAYS—TRACK MILEAGE, CLASSIFIED BY CHARACTER OF MOTIVE POWER, OWNERSHIP, AND LOCATION.

Table 24													
TRACK.	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>			TRACK.	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907					1902-1912	1907-1912	1902-1907
<i>Kind.</i>							<i>Classification—Contd.</i>						
Total.....	41,064.82	34,403.56	22,572.52	81.9	19.4	52.4	By ownership:						
Main track.....	38,333.62	32,485.87	21,681.94	76.8	18.0	49.8	Owned.....	33,416.86	27,458.97	19,038.98	75.5	21.7	44.2
Road or first track.....	30,437.86	25,547.19	16,651.58	82.8	19.1	53.4	Leased <sup>2</sup> .....	7,647.96	6,922.54	3,534.78	116.4	10.5	95.8
Second (including third, etc.) track.....	7,895.76	6,938.68	5,030.36	57.0	13.8	37.9	Operated under trackage rights.....	1,284.82	692.28	559.68	129.6	85.6	23.7
Sidings and turnouts, including track in car barns, storage yards, etc.	2,731.20	1,917.69	907.53	200.9	42.4	111.3	From electric railway companies.....	1,051.19	692.28	559.68	87.8	51.8	23.7
							From steam roads <sup>3</sup> .....	233.63	( <sup>4</sup> )	( <sup>4</sup> )			
<i>Classification.</i>							By location:						
By character of motive power:							(a) Surface.....	40,532.02	33,966.40	22,263.58	82.1	19.3	52.6
Electric.....	40,808.39	34,059.69	21,901.53	86.3	19.8	55.5	Elevated.....	420.10	366.59	308.94	36.0	14.6	18.7
Electric line transmission.....	40,704.91	34,034.19	21,899.06	85.9	19.6	55.4	Subways and tunnels.....	112.70	70.57	( <sup>4</sup> )		59.7	
Overhead trolley.....	38,958.06	32,501.71	21,290.09	83.0	19.9	52.7	(b) On public thoroughfares.....	26,271.10	23,431.72	18,774.92	39.9	12.1	24.8
Third rail.....	1,395.13	1,209.78	342.91	306.8	15.3	252.8	On private right of way.....	14,793.72	10,971.84	3,802.07	289.1	34.8	188.6
Conduit.....	351.72	322.70	266.06	32.2	9.0	21.3	(c) City and suburban lines.....	24,699.02	( <sup>4</sup> )	( <sup>4</sup> )			
Gas-electric motors.....	38.81	22.50	2.47			72.5	Interurban lines.....	16,365.80	( <sup>4</sup> )	( <sup>4</sup> )			
Storage batteries.....	64.67	3.00											
Cable.....	56.41	61.71	240.69	-76.6	-8.6	-74.4							
Animal.....	57.52	136.11	259.10	-77.8	-57.7	-47.5							
Steam.....	76.34	105.06	169.61	-55.0	-27.3	-38.1							
Gasoline motors.....	66.16	40.99	26.06		61.4								

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Compressed air.

<sup>3</sup> Includes trackage rights from steam roads.

<sup>4</sup> Included under "Leased."

<sup>5</sup> Figures not available.

<sup>6</sup> Figures not available; included under "Surface."

<sup>7</sup> Reported in 1907 and 1902 as within and without city limits; figures not comparable.

One pair of rails on any thoroughfare constitutes a single main track, and a second pair of rails alongside of the first is a second main track. The length of the second main track, therefore, represents double trackage, except that third and fourth main tracks, in the few places where they occur, are included under second main track.

The length of track that should be regarded as second track rather than sidings and turnouts is left to the judgment of each company. The difference between first main track, or length of road, and second track represents, approximately, the amount of single-track line, although this is not strictly correct, because of the inclusion of third, fourth, etc., main tracks with second main track. The amount of third, etc., main track is relatively small, although figures for the aggregate amount are not available. Ignoring this factor, the

length of single track in 1912 was 22,542.10 miles, as compared with 18,608.51 miles in 1907 and 11,621.22 miles in 1902, an increase of 21.1 per cent for the period 1907-1912, 60.1 per cent for the period 1902-1907, and 94 per cent for the decade.

*Track operated by electric power.*—Electricity was used as the motive power on 40,808.39 miles of street and electric railway track in 1912, or 99.4 per cent of the total mileage for that year. In 1902 there were 675.46 miles of track operated by nonelectric power, while in 1912 there were but 256.43 miles, but little more than one-third of the amount reported at the former census. All classes of nonelectric power show a rapid decrease, with the exception of gasoline motors. There was no trackage operated by this class of power in 1902, but there were 40.99 miles in 1907 and 66.16 in 1912.

Table 25 shows the percentages of the total trackage operated by the several kinds of motive power in use in 1912, 1907, and 1902.

Table 25	TRACK.	TRACK MILEAGE—PER CENT OF TOTAL (BASED ON TABLE 24).		
		1912	1907	1902
	<i>Kind.</i>			
	Total.....	100.0	100.0	100.0
	Main track.....	93.3	94.4	96.1
	Road or first track.....	74.1	74.3	73.8
	Second (including third, etc.) track.....	19.2	20.2	22.3
	Sidings and turnouts, including track in car barns, storage yards, etc.....	6.7	5.6	4.0
	<i>Classification.</i>			
	By character of motive power:			
	Electric.....	99.4	99.0	97.0
	Electric line transmission.....	99.1	98.9	97.0
	Overhead trolley.....	94.9	94.5	94.3
	Third rail.....	3.4	3.5	1.5
	Conduit.....	0.9	0.9	1.2
	Gas-electric motors.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Storage batteries.....	0.2		
	Cable.....	0.1	0.2	1.1
	Animal.....	0.1	0.4	1.1
	Steam.....	0.2	0.3	0.8
	Gasoline motors.....	0.2	0.1	( <sup>1</sup> )
	By ownership:			
	Owned.....	81.4	79.8	84.3
	Leased.....	18.6	20.1	15.7
	Operated under trackage rights.....	3.1	2.0	2.5
	From electric railway companies.....	2.5	2.0	2.5
	From steam roads.....	0.6		
	By location:			
	(a) Surface.....	98.7	98.7	98.6
	Elevated.....	1.0	1.1	1.4
	Subways and tunnels.....	0.3	0.2	
	(b) On public thoroughfares.....	64.0	68.1	83.2
	On private right of way.....	35.0	31.9	16.8
	(c) City and suburban lines.....	60.1		
	Interurban lines.....	39.9		

<sup>1</sup> Less than one-tenth of 1 per cent.

Table 26 shows comparative statistics for track operated by the different electric systems, for 1912, 1907, and 1902.

Table 26	ELECTRIC TRACK—NUMBER OF COMPANIES AND MILES OF TRACK, BY KIND OF SYSTEM.						
	KIND OF SYSTEM.	1912	1907	1902	Per cent of increase.		
					1902-1912	1907-1912	1902-1907
Number of operating companies reporting electric track.....	942	904	747	26.1	4.2	21.0	
Overhead trolley.....	926	895	736	25.8	3.5	21.6	
Third rail.....	25	23	11	-----	-----	-----	
Conduit.....	13	10	11	-----	-----	-----	
Storage batteries.....	10	1	2	-----	-----	-----	
Gas-electric motors.....	1	1		-----	-----	-----	
Miles of electric track.....	40,808.39	34,059.69	21,901.53	86.3	19.8	55.5	
Overhead trolley.....	38,958.06	32,501.71	21,290.09	83.0	19.9	52.7	
Third rail.....	1,395.13	1,029.78	342.91	306.8	35.5	200.3	
Conduit.....	351.72	322.70	266.06	32.2	9.0	21.3	
Storage batteries.....	64.67	3.00	2.47	-----	-----	-----	
Gas-electric motors.....	38.81	22.50		-----	-----	-----	
Per cent of total electric track:							
Overhead trolley.....	95.5	95.4	97.2	-----	-----	-----	
Third rail.....	3.3	3.6	1.6	-----	-----	-----	
Conduit.....	0.9	0.9	1.2	-----	-----	-----	
Storage batteries.....	0.2	( <sup>2</sup> )	( <sup>2</sup> )	-----	-----	-----	
Gas-electric motors.....	0.1	0.1		-----	-----	-----	

<sup>1</sup> Includes 2.44 miles which is also operated with gasoline motors.

<sup>2</sup> Less than one-tenth of 1 per cent.

*Overhead trolley.*—The proportion of electric trackage operated by overhead trolley was slightly less in 1912 and 1907 than in 1902, although it was practically in universal use during the three census periods.

The miles of electric track operated by overhead trolley increased from 21,290.09 in 1902 to 38,958.06 in 1912, a gain of 83 per cent. It formed 97.2 per cent of the total trackage in 1902 and 95.5 per cent in 1912.

The number of companies and the miles of electric track other than overhead trolley are shown, by states, for 1912, 1907, and 1902, in Table 27.

Table 27	ELECTRIC SYSTEMS, OTHER THAN OVERHEAD TROLLEY.						
	KIND AND STATE.	Number of com- panies.			Miles of single track.		
		1912	1907	1902	1912	1907	1902
<i>Third rail.</i>							
United States.....	25	23	11	1,395.13	1,209.78	342.91	
California.....	3	2	.....	194.79	114.70	.....	
Connecticut.....	.....	.....	1	.....	.....	25.89	
Illinois.....	5	5	4	253.33	213.44	108.76	
Massachusetts.....	1	1	2	33.96	19.19	41.45	
Michigan.....	2	2	1	138.58	81.13	36.63	
New Jersey <sup>1</sup> .....	1	2	.....	9.56	132.45	.....	
New York.....	7	5	3	496.66	415.86	130.18	
Ohio.....	1	1	.....	71.18	71.10	.....	
Pennsylvania.....	4	4	.....	134.06	115.50	.....	
Washington.....	1	1	.....	63.01	50.41	.....	
<i>Conduit.</i>							
United States.....	13	10	11	351.72	322.70	266.06	
District of Columbia.....	7	7	6	115.18	96.14	86.88	
New York.....	6	3	4	236.54	226.56	178.89	
Michigan.....	.....	.....	1	.....	.....	0.29	
<i>Storage batteries.</i>							
United States.....	10	1	2	64.67	3.00	2.47	
Delaware.....	1	.....	.....	10.80	.....	.....	
District of Columbia.....	1	.....	.....	<sup>2</sup> 2.44	.....	.....	
Illinois.....	.....	1	1	.....	3.00	1.50	
Maryland.....	1	.....	.....	3.16	.....	.....	
New York.....	4	.....	1	28.17	.....	0.97	
Pennsylvania.....	2	.....	.....	17.10	.....	.....	
South Carolina.....	1	.....	.....	3.00	.....	.....	
<i>Gas-electric motors.</i>							
United States.....	1	1	.....	38.81	22.50	.....	
Kansas.....	.....	1	.....	.....	22.50	.....	
Minnesota.....	1	.....	.....	38.81	.....	.....	

<sup>1</sup> One company with 130.95 miles of track in 1907, reported as an electric road, classified as an electrified division of a steam road in 1912.

<sup>2</sup> Also operated by gasoline motors.

*Third rail.*—The third-rail system, being limited to elevated structures, subways, and tunnels, and to tracks on private right of way, is still of minor importance. The trackage operated under this system, however, was more than four times as great in 1912 as in 1902.

*Conduit.*—The conduit system (sometimes referred to as "conduit trolley") is the most expensive type of electric traction construction, and is in use only where municipal regulations prohibit the use of overhead trolleys. The 13 companies reporting this system in 1912 were confined to New York City and the District of Columbia. Their trackage increased from 266.06 miles in 1902 to 351.72 miles in 1912, a gain of 32.2 per cent.

*Storage batteries.*—In 1907 there was but one road, with 3 miles of track, operated by storage batteries. In 1912, 10 companies reported the use of storage batteries, and the miles of track had increased to 64.67, practically all of which was in New York, Pennsylvania, and Delaware.

## STREET AND ELECTRIC RAILWAYS.

*Gas-electric motors.*—The term refers to the electric motor system in which the car carries an electric generating set and is independent of outside power. The equipment consists of an internal-combustion engine, a dynamo, a storage battery, and the car motors. The storage battery absorbs the charge dur-

ing the periods of rest or light load and supplements the dynamo at times of heavy power consumption.

Table 28 gives the miles of track, classified as "Electric" and "All other," by geographic divisions and states, together with the miles of track within each division and state, for 1912, 1907, and 1902.

STREET AND ELECTRIC RAILWAYS—NUMBER OF OPERATING COMPANIES AND MILES OF TRACK OPERATED: 1912, 1907, AND 1902.

Table 28		DIVISION AND STATE.	Census.	Number of operating companies.	MILES OF TRACK OPERATED BY COMPANIES IN DIVISION OR STATE: 1912, 1907, AND 1902.			Miles of track in division or state.
					Total.	Electric.	All other.	
UNITED STATES...		1912	975	41,064.82	40,811.49	253.33	41,032.91	
		1907	945	34,381.51	34,037.64	343.87	34,353.99	
		1902	817	22,572.52	21,897.06	675.46	22,568.32	
GEOGRAPHIC DIVISIONS:								
New England.....		1912	91	5,294.55	5,280.01	14.54	5,299.02	
		1907	121	4,874.04	4,870.61	3.43	4,862.93	
		1902	141	4,008.32	4,005.32	3.00	4,013.52	
Middle Atlantic...		1912	246	10,043.03	9,993.81	49.52	10,064.31	
		1907	249	8,820.98	8,714.80	115.18	8,891.06	
		1902	220	6,152.10	5,917.52	234.58	6,168.14	
East North Central.		1912	222	11,809.69	11,764.76	44.93	11,883.69	
		1907	220	10,335.97	10,251.02	84.95	10,353.18	
		1902	181	6,074.60	5,962.57	112.03	6,148.88	
West North Central.		1912	85	3,098.62	3,089.71	8.91	3,030.50	
		1907	73	2,508.36	2,459.85	48.51	2,454.61	
		1902	60	1,740.72	1,671.26	69.46	1,688.67	
South Atlantic....		1912	107	2,962.28	2,922.09	40.19	2,899.75	
		1907	101	2,294.23	2,285.95	8.28	2,244.46	
		1902	80	1,670.15	1,656.47	13.68	1,628.90	
East South Central.		1912	45	1,287.26	1,285.41	1.85	1,290.68	
		1907	40	1,064.69	1,052.81	11.88	1,074.75	
		1902	34	768.17	731.34	36.83	762.90	
West South Central.		1912	79	1,376.23	1,363.05	13.18	1,371.80	
		1907	50	841.22	831.19	10.03	839.98	
		1902	32	554.28	539.09	15.19	553.13	
Mountain.....		1912	40	1,007.32	1,001.19	6.13	1,047.52	
		1907	28	601.39	601.39	.....	630.24	
		1902	20	409.48	401.03	8.45	409.48	
Pacific.....		1912	60	4,185.84	4,111.46	74.38	4,145.64	
		1907	63	3,031.63	2,970.02	61.61	3,002.78	
		1902	49	1,194.70	1,012.46	182.24	1,194.70	
NEW ENGLAND:								
Maine.....		1912	16	536.38	533.28	3.10	530.49	
		1907	17	424.06	421.06	3.00	418.12	
		1902	19	331.55	328.55	3.00	328.50	
New Hampshire...		1912	13	246.26	246.26	.....	268.15	
		1907	16	247.10	247.10	.....	268.38	
		1902	7	167.65	167.65	.....	174.45	
Vermont.....		1912	9	102.85	102.85	.....	120.83	
		1907	10	124.31	124.31	.....	113.38	
		1902	9	80.55	80.55	.....	86.05	
Massachusetts...		1912	43	3,010.48	3,009.28	1.20	2,950.96	
		1907	63	2,877.50	2,877.07	0.43	2,851.11	
		1902	75	2,521.18	2,521.18	.....	2,503.11	
Rhode Island.....		1912	2	395.71	385.47	10.24	435.37	
		1907	6	419.92	419.92	.....	430.76	
		1902	8	328.90	328.90	.....	342.92	
Connecticut.....		1912	8	1,002.87	1,002.87	.....	993.22	
		1907	9	781.15	781.15	.....	781.18	
		1902	23	578.49	578.49	.....	578.49	
MIDDLE ATLANTIC:								
New York.....		1912	101	4,605.44	4,566.55	38.89	4,485.81	
		1907	101	3,884.74	3,788.24	96.50	3,809.19	
		1902	96	2,809.91	2,590.16	219.75	2,797.90	
New Jersey.....		1912	24	1,319.85	1,319.85	.....	1,308.97	
		1907	26	1,324.12	1,324.12	.....	1,319.80	
		1902	26	861.28	858.66	2.62	865.66	
Pennsylvania.....		1912	121	4,117.74	4,107.41	10.33	4,269.53	
		1907	122	3,621.12	3,602.44	18.68	3,762.07	
		1902	98	2,480.91	2,468.70	12.21	2,504.58	
EAST NORTH CENTRAL:								
Ohio.....		1912	75	4,069.12	4,067.06	2.06	3,990.22	
		1907	73	3,762.69	3,718.63	44.06	3,671.45	
		1902	63	2,353.43	2,351.32	2.11	2,338.50	
Indiana.....		1912	34	2,301.34	2,293.27	3.07	2,323.38	
		1907	33	1,922.93	1,928.68	4.25	1,928.78	
		1902	27	646.66	643.87	2.79	656.63	
Illinois.....		1912	67	3,125.84	3,086.04	39.80	3,185.73	
		1907	70	2,774.67	2,738.03	36.64	2,753.71	
		1902	50	1,635.20	1,528.07	107.13	1,659.35	
Michigan.....		1912	22	1,507.26	1,507.26	.....	1,526.25	
		1907	24	1,275.03	1,275.03	.....	1,323.71	
		1902	24	1,022.81	1,022.81	.....	1,048.26	
Wisconsin.....		1912	24	806.13	806.13	.....	849.11	
		1907	20	590.65	590.65	.....	675.53	
		1902	17	416.50	416.50	.....	446.14	
WEST NORTH CENTRAL:								
Minnesota.....		1912	9	555.18	552.55	2.63	538.48	
		1907	5	457.15	456.02	1.13	437.82	
		1902	5	338.17	338.17	.....	316.27	
Iowa.....		1912	24	803.87	803.87	.....	783.87	
		1907	24	639.84	619.45	20.39	641.39	
		1902	22	378.25	374.43	3.82	341.35	
Missouri.....		1912	19	996.00	993.53	2.47	959.01	
		1907	14	921.67	919.20	2.47	806.68	
		1902	16	758.38	719.48	38.90	713.68	
North Dakota....		1912	3	26.02	26.02	.....	19.18	
		1907	4	16.09	16.09	.....	13.66	
South Dakota.....		1912	2	21.59	21.59	.....	21.59	
		1907	1	5.00	5.00	.....	5.00	
		1902	1	2.00	2.00	.....	2.00	
Nebraska.....		1912	7	243.80	242.00	1.80	214.46	
		1907	8	218.73	211.01	7.72	184.34	
		1902	4	113.66	110.55	3.11	119.56	
Kansas.....		1912	21	452.16	450.15	2.01	493.91	
		1907	17	249.88	233.08	16.80	305.72	
		1902	12	150.26	128.63	21.63	195.81	
SOUTH ATLANTIC:								
Delaware.....		1912	4	90.37	90.37	.....	99.37	
		1907	4	95.93	95.93	.....	104.93	
		1902	3	85.61	85.61	.....	85.61	
Maryland.....		1912	14	692.51	685.68	6.83	719.74	
		1907	13	536.18	536.18	.....	551.51	
		1902	10	437.84	437.84	.....	455.44	
District of Columbia.		1912	7	214.23	214.23	.....	188.46	
		1907	6	176.03	176.03	.....	160.02	
		1902	8	161.97	161.97	.....	146.17	
Virginia.....		1912	18	561.86	554.88	6.98	561.49	
		1907	23	515.54	515.54	.....	512.99	
		1902	21	359.30	357.30	2.00	358.17	
West Virginia....		1912	21	404.98	404.98	.....	330.18	
		1907	15	265.41	265.41	.....	207.72	
		1902	8	140.00	140.00	.....	93.08	
North Carolina...		1912	13	190.26	188.23	2.03	190.26	
		1907	11	106.44	103.69	2.75	106.44	
		1902	7	46.32	46.32	.....	46.32	
South Carolina....		1912	6	202.60	202.60	.....	228.08	
		1907	7	131.26	129.76	1.50	131.18	
		1902	7	76.98	73.80	3.18	76.98	
Georgia.....		1912	14	440.63	428.53	12.10	417.33	
		1907	12	349.18	346.28	2.90	351.41	
		1902	10	300.38	296.63	3.75	305.38	
Florida.....		1912	10	164.84	152.59	12.25	164.84	
		1907	10	118.26	117.13	1.13	118.26	
		1902	6	61.75	57.00	4.75	61.75	

<sup>1</sup> Includes 31.91 miles of track lying outside of the United States.

<sup>2</sup> Includes 2.44 miles operated by storage battery and gasoline motor.

<sup>3</sup> Includes 3 miles of track in Canada.

<sup>4</sup> Includes 24.48 miles of track in Canada.

<sup>5</sup> Includes 4.43 miles of track in Mexico.

STREET AND ELECTRIC RAILWAYS—NUMBER OF OPERATING COMPANIES AND MILES OF TRACK OPERATED:  
1912, 1907, AND 1902—Continued.

Table 28—Contd.													
DIVISION AND STATE.	Census.	Number of operating companies.	MILES OF TRACK OPERATED BY COMPANIES IN DIVISION OR STATE: 1912, 1907, AND 1902.			Miles of track in division or state.	DIVISION AND STATE.	Census.	Number of operating companies.	MILES OF TRACK OPERATED BY COMPANIES IN DIVISION OR STATE: 1912, 1907, AND 1902.			Miles of track in division or state.
			Total.	Electric.	All other.					Total.	Electric.	All other.	
EAST SOUTH CENTRAL:							MOUNTAIN—Contd.						
Kentucky.....	1912	10	493.21	493.21	.....	502.38	New Mexico.....	1912	2	10.60	10.60	.....	10.60
	1907	13	389.13	389.13	.....	402.34		1907	2	10.10	10.10	.....	10.10
	1902	12	283.95	283.95	.....	284.35		1902	1	2.10	.....	2.10	2.10
Tennessee.....	1912	12	370.28	369.31	0.97	360.93	Arizona.....	1912	4	46.24	46.24	.....	46.24
	1907	9	297.50	296.62	0.88	292.15		1907	4	30.75	30.75	.....	30.75
	1902	8	254.20	248.40	5.80	248.53		1902	2	17.10	12.00	5.10	17.10
Alabama.....	1912	11	306.63	306.63	.....	308.80	Idaho.....	1912	3	88.93	88.93	.....	129.13
	1907	10	291.66	280.66	11.00	293.86		1907	2	44.24	44.24	.....	73.09
	1902	9	204.72	173.69	31.03	204.72		1902	1	3.50	3.50	.....	3.50
Mississippi.....	1912	12	117.14	116.26	0.88	118.57	Wyoming.....	1912	2	22.91	22.91	.....	22.91
	1907	8	86.40	86.40	.....	86.40	Nevada.....	1912	2	11.27	11.27	.....	11.27
	1902	5	25.30	25.30	.....	25.30		1907	1	7.15	7.15	.....	7.15
WEST SOUTH CENTRAL:							Utah.....	1912	5	260.18	254.05	6.13	260.18
Arkansas.....	1912	10	122.92	121.94	0.98	113.72		1907	3	122.54	122.54	.....	122.54
	1907	8	87.39	86.41	0.98	82.22		1902	3	89.04	89.04	.....	89.04
	1902	7	52.49	49.83	2.66	51.33	PACIFIC:						
Louisiana.....	1912	13	285.10	285.10	.....	285.10	Washington.....	1912	19	1,035.92	1,026.31	9.61	991.17
	1907	11	238.52	238.52	.....	238.52		1907	14	764.73	743.64	21.09	730.27
	1902	8	198.52	192.86	5.66	198.52		1902	8	228.93	214.33	14.60	228.93
Oklahoma.....	1912	17	251.56	251.56	.....	251.56	Oregon.....	1912	6	544.64	521.03	23.61	549.19
	1907	8	100.44	100.44	.....	100.44		1907	8	253.41	252.39	1.02	259.02
Texas.....	1912	39	1,716.65	704.45	12.20	721.42		1902	6	136.67	132.17	4.50	136.67
	1907	23	414.87	405.82	9.05	418.80	California.....	1912	35	2,605.28	2,564.12	41.16	2,605.28
	1902	17	303.27	296.40	6.87	303.28		1907	41	2,013.49	1,973.99	39.50	2,013.49
MOUNTAIN:								1902	35	829.10	665.96	163.14	829.10
Montana.....	1912	6	99.22	99.22	.....	99.22							
	1907	5	69.24	69.24	.....	69.24							
	1902	5	63.21	63.21	.....	63.21							
Colorado.....	1912	16	467.97	467.97	.....	467.97							
	1907	11	317.37	317.37	.....	317.37							
	1902	8	234.53	233.28	1.25	234.53							

1 Includes 4.43 miles of track in Mexico.

*Interstate trackage.*—The term “miles of track operated” refers to the operated trackage of the companies credited to the respective geographic divisions and states. The miles of track in a state or division excludes trackage outside of the state or division but owned by companies within it, and includes trackage within the state or division but owned by outside companies. The differences between totals for the United States represent trackage lying outside of the United States.

Table 29 shows the actual trackage in each state and the statistics in detail for interstate trackage for 1912.

It will be seen that certain states do not receive credit for the operation of considerable trackage located within them, notably New Hampshire, Vermont, Rhode Island, Pennsylvania, Maryland, South Carolina, and Idaho; and on the other hand, the statistics for certain other states are inflated by outside

business, the states chiefly profiting being Massachusetts, New York, Ohio, Missouri, Nebraska, District of Columbia, West Virginia, Georgia, and Washington. Diagram 1 (p. 192) shows the net trackage graphically by states.

The track lying outside of the United States but operated by companies for which statistics were included in the reports for the respective censuses is shown in the following tabular statement:

COUNTRY OR PROVINCE.	MILES OF TRACK LYING OUTSIDE OF THE UNITED STATES.		
	1912	1907	1902
Total.....	31.91	27.52	4.20
In Dominion of Canada.....	27.48	26.28	3.05
Ontario, operated by a company in New York.	24.48	23.23	.....
New Brunswick, operated by a company in Maine.....	3.00	3.05	3.05
In Mexico, operated by a company in Texas.....	4.43	1.24	1.15

## STREET AND ELECTRIC RAILWAYS.

STREET AND ELECTRIC RAILWAYS—MILES OF TRACK OPERATED: 1912.

Table 29 STATE.	Net total in state.	Reported by com- panies in state.	LOCATED OUTSIDE OF STATE, OPERATED BY COMPANIES IN STATE.		LOCATED WITHIN STATE, OPERATED BY COMPANIES OUTSIDE OF STATE.	
			Total.	States and miles of track.	Total.	States and miles of track.
UNITED STATES.....	41,032.91	41,064.82	31.91	Canada, 27.48; Mexico, 4.43.....		
NEW ENGLAND:						
Maine.....	530.49	536.38	5.89	N. H., 2.89; Canada, 3.....	21.89	Me., 2.89; Vt., 2.87; Mass., 16.13.
New Hampshire.....	208.15	246.26			20.85	Mass., 20.85.
Vermont.....	120.83	102.85	2.87	N. H., 2.87.....		
Massachusetts.....	2,950.96	3,010.48	59.52	N. H., 16.13; R. I., 22.54; Vt., 20.85.....	41.61	Mass., 22.54; Conn., 19.07.
Rhode Island.....	435.37	395.71	1.95	Conn., 1.95.....	9.42	R. I., 1.95; N. Y., 7.47.
Connecticut.....	993.22	1,002.87	19.07	R. I., 19.07.....		
MIDDLE ATLANTIC:						
New York.....	4,485.81	4,605.44	133.12	Conn., 7.47; N. J., 11.08; Pa., 89.49; Canada, 34.48.....	13.49	Pa., 13.49.
New Jersey.....	1,308.97	1,319.85	22.56	Pa., 22.56.....	11.68	N. Y., 11.68.
Pennsylvania.....	4,269.53	4,117.74	25.74	Md., 1.25; Ohio, 2; N. Y., 13.49; Del., 9.....	173.03	N. Y., 89.49; N. J., 22.56; Ohio, 60.98.
EAST NORTH CENTRAL:						
Ohio.....	3,999.22	4,069.12	141.70	Ind., 43.31; Mich., 37.41; Pa., 60.98.....	71.80	Pa., 2; Mich., 2.84; W. Va., 65.96; Ky., 1.
Indiana.....	2,323.38	2,301.34	20.32	Ill., 24.22; Ky., 2.10.....	48.36	Ohio, 43.31; Mich., 5.05.
Illinois.....	3,135.73	3,125.84	20.15	Pa., 24.76; Wis., 15.39.....	80.04	Ind., 24.22; Wis., 6.48; Iowa, 49.34.
Michigan.....	1,526.25	1,507.26	18.42	Ohio, 2.84; Ind., 5.05; Wis., 10.53.....	37.41	Ohio, 37.41.
Wisconsin.....	849.11	806.13	6.48	Ill., 6.48.....	49.46	Ill., 15.39; Mich., 10.53; Minn., 23.54.
WEST NORTH CENTRAL:						
Minnesota.....	538.48	555.18	23.97	Wis., 23.54; N. Dak., 0.43.....	7.27	N. Dak., 7.27.
Iowa.....	783.87	803.87	49.34	Ill., 49.34.....	29.34	Nebr., 29.34.
Missouri.....	950.01	996.00	64.22	Kans., 64.22.....	27.23	Ill., 4.76; Kans., 22.47.
North Dakota.....	19.13	20.02	7.27	Minn., 7.27.....	0.43	Minn., 0.43.
South Dakota.....	21.50	21.50				
Nebraska.....	214.40	243.80	29.34	Iowa, 29.34.....	64.22	Mo., 64.22.
Kansas.....	403.91	452.16	22.47	Mo., 22.47.....		
SOUTH ATLANTIC:						
Delaware.....	99.37	90.37			9.00	Pa., 9.
District of Columbia.....	188.46	214.23	30.48	Md., 30.48.....	4.71	Va., 4.71.
Maryland.....	719.74	692.51	4.50	Pa., 4.50.....	31.73	Pa., 1.25; D. C., 30.48.
Virginia.....	561.40	561.86	4.71	D. C., 4.71.....	4.34	W. Va., 0.77; Tenn., 3.57.
West Virginia.....	330.18	404.98	74.80	Ohio, 65.06; Ky., 8.07; Va., 0.77.....		
North Carolina.....	190.26	190.26				
South Carolina.....	228.08	202.60			25.48	Ga., 25.48.
Georgia.....	417.33	440.63	27.65	Ala., 2.17; S. C., 25.48.....	4.35	Tenn., 4.35.
Florida.....	164.84	164.84				
EAST SOUTH CENTRAL:						
Kentucky.....	502.38	493.21	1.00	Ohio, 1.....	10.17	Ind., 2.10; W. Va., 8.07.
Tennessee.....	360.93	370.28	9.35	Ga., 4.35; Va., 3.57; Miss., 1.43.....	2.17	Ga., 2.17.
Alabama.....	308.80	306.63			1.43	Tenn., 1.43.
Mississippi.....	113.57	117.14				
WEST SOUTH CENTRAL:						
Arkansas.....	113.72	122.92	9.20	Tex., 9.20.....		
Louisiana.....	285.10	285.10				
Oklahoma.....	251.56	251.56	4.43	Mexico, 4.43.....	9.20	Ark., 9.20.
Texas.....	721.42	716.65				
MOUNTAIN:						
Montana.....	99.22	99.22				
Colorado.....	467.97	467.97				
New Mexico.....	10.60	10.60				
Arizona.....	46.24	46.24				
Idaho.....	129.13	88.93			40.20	Wash., 40.20.
Wyoming.....	22.91	22.91				
Nevada.....	11.27	11.27				
Utah.....	260.18	260.18				
PACIFIC:						
Washington.....	991.17	1,035.92	44.75	Idaho, 40.20; Oreg., 4.55.....	4.55	Wash., 4.55.
Oregon.....	549.19	544.64				
California.....	2,605.28	2,605.28				

*Electrified trackage of all companies and systems.*—In addition to the 41,064.82 miles of track operated by the street and electric railways in 1912, there were 1,409.15 miles of single track operated by roads outside of the classified industry, this supplemental trackage comprising 1,284.11 miles operated by the electrified divisions of steam roads, 63.04 miles of electrified trackage through tunnels on steam roads, and 62 miles of narrow-gauge track (2-foot gauge) of the tunnel companies operated by the Chicago Tunnel Co., which does a merchandise and freight business in tunnels under the streets of Chicago, and the Bingham

Central Railway Co. of Utah, which does an ore-haulage business.

The 1,284.11 miles operated by the electrified divisions of steam roads comprises 1,184.49 miles of electric trackage and 99.62 miles of exclusively steam trackage. Of the 313.60 miles of steam trackage, 213.98 miles was reported by companies operating both steam and electric trains, so that of the 1,284.11 miles reported by the electrified divisions of steam roads, 970.51 was operated by electricity exclusively, 213.98 was used by both steam and electric trains, and 99.62 by steam trains only.



Table 30 gives the track statistics for all companies and systems and shows the total electrified trackage of the country, by states, for all states where there is electrified trackage other than that reported for street and electric railways.

**Table 30**

KIND AND STATE.	MILES OF TRACK—ELECTRIFIED TRackage OF ALL CLASSES OF COMPANIES AND SYSTEMS, BY STATES: 1912.				
	Total.	Street and electric railways.	Tunnel companies not included with street and electric railways.	Steam railroads.	
				Electrified divisions.	Electric tunnel haulage.
Number of operating companies.....	1,000	975	2	18	5
Miles of single track.....	42,473.97	41,064.82	62.00	1,284.11	63.04
Electric.....	42,117.92	40,808.39	62.00	1,184.49	63.04
Overhead trolley.....	39,724.53	38,958.06	62.00	669.33	35.14
Third rail.....	1,938.19	1,395.13		515.16	27.90
Other electric.....	455.20	455.20			
Steam.....	1,389.94	76.34		1,313.60	
Cable, animal, and gasoline motor.....	180.09	180.09			
<i>Electric.</i>					
California.....	2,714.42	2,564.12		150.30	
Overhead trolley.....	2,486.51	2,369.33		117.18	
Third rail.....	227.91	194.79		33.12	
New Jersey.....	1,470.22	1,319.85		150.37	
Overhead trolley.....	1,318.94	1,310.29		8.65	
Third rail.....	151.28	9.56		141.72	
New York.....	5,181.71	4,563.45		618.26	
Overhead trolley.....	4,080.02	3,802.08		277.94	
Third rail.....	836.98	496.66		340.32	
Other electric.....	264.71	264.71			
All other states.....	32,751.57	32,360.97	62.00	265.56	63.04
Overhead trolley.....	31,839.06	31,476.36	62.00	265.56	35.14
Third rail.....	722.02	694.12			27.90
Other electric.....	190.49	190.49			
<i>Overhead trolley.</i>					
California.....	2,486.51	2,369.33		117.18	
Illinois.....	2,994.69	2,832.71	58.00	103.98	
Maryland.....	683.54	682.52			1.02
Massachusetts.....	3,013.97	2,975.32		16.78	21.87
Michigan.....	1,370.93	1,368.68			2.25
Montana.....	122.60	99.22		23.38	
New Jersey.....	1,318.94	1,310.29		8.65	
New York.....	4,080.02	3,802.08		277.94	
Ohio.....	4,010.08	3,995.88		14.20	
Rhode Island.....	423.93	385.47		38.46	
South Dakota.....	26.08	21.59		4.49	
Utah.....	258.05	254.05	4.00		
Virginia.....	615.82	551.55		64.27	
Washington.....	973.30	963.30			10.00
All other states.....	17,346.07	17,346.07			
<i>Third rail.</i>					
California.....	227.91	194.79		33.12	
New Jersey.....	151.28	9.56		141.72	
New York.....	836.98	496.66		340.32	
All other states.....	722.02	694.12			27.90

<sup>1</sup> Includes 213.98 miles of duplicated track.

*Power other than electricity.*—Table 31 shows the number of companies using motive power other than electricity and the number using such power exclusively, with miles of track operated by each kind of power, for 1912, 1907, and 1902.

The 21 companies employing cable traction in 1912 include 7 in California, 5 in Pennsylvania, 2 each in Minnesota and Washington, and 1 each in Mississippi, Missouri, Ohio, Tennessee, and Virginia. The 13 companies using animal power include 3 in New York, 3 in Texas, and 1 each in Arkansas, Indiana, Kansas, Maine, Mississippi, Nebraska, and Ohio.

Steam trackage operated by street and electric railways was reported by 9 companies, 1 each in 9 states, and gasoline motor trackage was reported by 2 com-

panies each in Georgia, California, and Texas, and by 1 each in Florida, Illinois, and Massachusetts,

**Table 31**

KIND OF POWER.	NUMBER OF COMPANIES USING POWER OTHER THAN ELECTRIC, AND MILES OF TRACK OPERATED.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies using—						
Cable.....	221	20	26	—19.2	5.0	—23.1
Animal.....	213	28	67	—80.6	—53.6	—58.2
Steam.....	9	12	12	—25.0	—25.0	.....
Gasoline motors.....	9	5	3	.....	80.0	.....
Number of companies (included above) operating exclusively by—						
Cable.....	13	10	12	8.3	30.0	—16.7
Animal.....	9	23	53	—83.0	—60.9	—56.6
Steam.....	1	3	3	—66.7	—66.7	.....
Gasoline motors.....	8	5	3	.....	60.0	.....
Miles of track.....	256.43	343.87	675.46	—62.0	—25.4	—40.9
Cable.....	56.41	61.71	240.69	—76.6	—8.6	—74.4
Animal.....	57.52	136.11	259.10	—79.0	—60.0	—47.5
Steam.....	76.34	105.06	169.61	—55.0	—27.8	—38.1
Gasoline motors.....	66.16	40.99	3.06	.....	61.4	.....

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> One company part cable and part animal.

<sup>3</sup> Compressed air.

*Elevated and subway trackage.*—The elevated and subway or tunnel trackage in 1912 aggregated 532.80 miles, as compared with 437.16 miles in 1907, and the surface trackage amounted to 40,532.02 miles in 1912, as compared with 33,966.40 miles in 1907. The proportionate increases in nonsurface and surface trackage were substantially the same, namely, 21.9 per cent for nonsurface (elevated and subway and tunnel) and 19.3 per cent for surface. In 1902 tracks in subways and tunnels were not reported separately, but the mileage of track on elevated structures aggregated 308.94.

Table 32 shows the miles of single track located on elevated structures, and in subways and tunnels, for 1912, 1907, and 1902.

**Table 32**

STATE.	ELEVATED AND SUBWAY AND TUNNEL TRackage, BY STATES.					
	Miles of single track.			Per cent of increase.		
	1912	1907	1902	1902-1912	1907-1912	1902-1907
<i>Elevated.</i>						
United States.....	420.10	362.39	308.94	36.0	15.9	17.3
Illinois.....	144.20	125.77	107.96	33.2	14.6	16.5
Maryland.....	1.40	1.40				
Massachusetts.....	26.58	16.70	16.02	65.9	59.0	4.2
Missouri.....	2.88	3.13				
New Jersey.....	4.37	17.26				
New York.....	280.80	200.41	184.96	24.8	15.2	8.4
Pennsylvania.....	9.87	7.07			28.7	
<i>Subway and tunnel.</i>						
United States.....	112.70	74.77	( <sup>2</sup> )	.....	50.7	.....
Illinois.....	1.87	0.60				
Massachusetts.....	18.45	7.75			138.1	
New Jersey.....	11.68					
New York.....	70.54	60.38				
Pennsylvania.....	8.42	5.62			49.8	
All other states.....	1.74	0.42				

<sup>1</sup> Includes 3.06 miles of Camden & Atlantic Branch of West Jersey & Seashore Railroad Co., tabulated as an electrified division of a steam road in 1912.

<sup>2</sup> Figures not available.

<sup>3</sup> Includes: 1912—California, Kansas, Missouri, Oregon, and Tennessee; 1907—Missouri.



The elevated and subway tracks of Illinois, Massachusetts, New York, and Pennsylvania represent the districts of Chicago, Boston, New York City, and Philadelphia, respectively. The 11.68 miles of subway and tunnel trackage of New Jersey is the portion of the Hudson & Manhattan system extending into that state, which in other tables is credited to New York, to which latter state the system as a unit is credited. The subway and tunnel trackage reported in the group of "All other states" no doubt represents track in under-crossings of steam railroad lines, not properly subways or tunnels, although so reported.

Elevated trackage was reported by 13 companies in 1912, distributed as follows: Illinois, 4; New York, 4; and 1 each in Maryland, Massachusetts, Missouri, New Jersey, and Pennsylvania. Subway and tunnel trackage was reported by 14 companies, located, 4 in New York (1 of which extends into New Jersey), 2 in Massachusetts, 2 in Pennsylvania, and 1 each in California, Illinois, Kansas, Missouri, Oregon, and Tennessee.

*Ownership of track.*—The track statistics, as reported by the operating companies, show the track owned by the companies, the track leased, and that operated under trackage rights. The trackage reported by the lessor street and electric railway companies is included in the leased track reported by the operating companies. This leased trackage includes not only the track of lessor street and electric railway companies, but all track leased from steam railroads, bridge companies, municipalities, etc., and also trackage rights over steam roads. In 1912, of the 41,064.82 miles of track operated, 33,416.86 miles, or 81.4 per cent, was owned by the operating companies and 7,647.96 miles, or 18.6 per cent, was leased, this leased trackage comprising 6,998.56 of operated track owned by lessor street and electric railway companies, 415.77 miles of track leased from steam roads, bridge companies, manufacturing corporations, and municipalities owning bridges, and 233.63 miles of trackage rights from steam roads. The statistics for this subdivision of trackage are given for 1912, 1907, and 1902 in Table 33.

STREET AND ELECTRIC RAILWAYS—MILES OF TRACK OWNED AND LEASED BY OPERATING COMPANIES:  
1912, 1907, AND 1902.

Table 33													
DIVISION AND STATE.	Census.	Total.	Owned.	Leased.	PER CENT OF TOTAL.		DIVISION AND STATE.	Census.	Total.	Owned.	Leased.	PER CENT OF TOTAL.	
					Owned.	Leased.						Owned.	Leased.
UNITED STATES...	1912	41,064.82	33,416.86	7,647.96	81.4	18.6	NEW ENGLAND—Con.						
	1907	34,403.56	27,480.65	6,922.91	79.9	20.1							
	1902	22,576.99	19,025.85	3,551.14	84.3	15.7							
GEOGRAPHIC DIVISIONS:							Massachusetts....	1912	3,010.48	2,463.10	547.38	81.8	18.2
								1907	2,886.85	2,339.88	546.97	81.1	18.9
								1902	2,525.65	2,040.41	485.24	80.8	19.2
New England.....	1912	5,294.55	3,957.04	1,337.51	74.7	25.3	Rhode Island.....	1912	395.71	54.77	340.94	13.8	86.2
	1907	4,883.39	3,845.66	1,037.73	78.7	21.3		1907	419.92	146.97	272.95	35.0	65.0
	1902	4,012.79	3,432.43	580.36	85.5	14.5		1902	328.90	328.90	0.00	100.0	0.0
Middle Atlantic...	1912	10,043.03	6,709.96	3,333.07	66.8	33.2	Connecticut.....	1912	1,002.87	690.77	312.10	68.9	31.1
	1907	8,829.98	5,016.11	3,813.87	63.6	36.4		1907	781.15	563.34	217.81	72.1	27.9
	1902	6,152.10	4,105.29	2,046.81	67.7	32.3	MIDDLE ATLANTIC:	1902	578.49	543.06	35.43	93.9	6.1
East North Central.	1912	11,809.69	9,826.45	1,983.24	83.2	16.8	New York.....	1912	4,605.44	3,811.34	794.10	82.8	17.2
	1907	10,342.17	8,046.39	2,295.78	77.8	22.2		1907	3,884.74	2,877.14	1,007.60	74.1	25.9
	1902	6,074.60	5,462.75	611.85	89.9	10.1		1902	2,500.91	2,287.25	213.66	81.4	18.6
West North Central.	1912	3,098.62	3,034.81	63.81	97.9	2.1	New Jersey.....	1912	1,319.85	728.75	591.10	56.0	44.0
	1907	2,598.36	2,409.16	189.20	96.0	4.0		1907	1,324.12	926.99	397.13	70.0	30.0
	1902	1,740.72	1,379.83	360.89	79.3	20.7		1902	861.28	623.37	237.91	72.4	27.6
South Atlantic....	1912	2,962.28	2,440.35	521.93	82.4	17.6	Pennsylvania.....	1912	4,117.74	2,159.87	1,957.87	52.5	47.5
	1907	2,300.73	2,186.31	114.42	95.0	5.0		1907	3,621.12	1,811.98	1,809.14	50.0	50.0
	1902	1,670.15	1,660.47	9.68	99.4	0.6		1902	2,480.91	1,254.67	1,226.24	50.6	49.4
East South Central.	1912	1,287.26	1,278.41	8.85	99.3	0.7	EAST NORTH CENTRAL:						
	1907	1,064.69	1,060.42	4.27	99.6	0.4	Ohio.....	1912	4,069.12	2,946.71	1,122.41	72.4	27.6
	1902	768.17	768.17	0.00	100.0	0.0		1907	3,767.10	2,718.08	1,049.02	72.2	27.8
West South Central.	1912	1,376.23	1,241.18	135.05	90.2	9.8		1902	2,353.43	2,101.21	252.22	89.3	10.7
	1907	841.22	721.94	119.28	85.8	14.2	Indiana.....	1912	2,301.34	1,788.82	512.52	77.7	22.3
	1902	554.28	554.28	0.00	100.0	0.0		1907	1,932.93	1,159.68	773.25	60.0	40.0
Mountain.....	1912	1,007.32	897.49	109.83	89.1	10.9		1902	646.66	646.66	0.00	100.0	0.0
	1907	601.39	593.64	7.75	98.7	1.3	Illinois.....	1912	3,125.84	3,044.12	81.72	97.4	2.6
	1902	409.48	407.93	1.55	99.6	0.4		1907	2,776.46	2,302.95	473.51	82.9	17.1
Pacific.....	1912	4,185.84	4,031.17	154.67	96.3	3.7		1902	1,635.20	1,275.57	359.63	78.0	22.0
	1907	3,031.63	3,001.02	30.61	99.0	1.0	Michigan.....	1912	1,507.26	1,248.67	258.59	82.8	17.2
	1902	1,194.70	1,194.70	0.00	100.0	0.0		1907	1,275.03	1,275.03	0.00	100.0	0.0
NEW ENGLAND:								1902	1,022.81	1,022.81	0.00	100.0	0.0
Maine.....	1912	536.38	430.01	106.37	80.2	19.8	Wisconsin.....	1912	806.13	798.13	8.00	99.0	1.0
	1907	424.06	424.06	0.00	100.0	0.0		1907	590.65	590.65	0.00	100.0	0.0
	1902	331.55	328.08	3.47	99.0	1.0	WEST NORTH CENTRAL:	1902	416.50	416.50	0.00	100.0	0.0
New Hampshire...	1912	246.26	215.54	30.72	87.5	12.5	Minnesota.....	1912	555.18	544.35	10.83	98.0	2.0
	1907	247.10	247.10	0.00	100.0	0.0		1907	457.15	457.15	0.00	100.0	0.0
	1902	167.65	111.43	56.22	66.5	33.5		1902	338.17	338.17	0.00	100.0	0.0
Vermont.....	1912	102.85	102.85	0.00	100.0	0.0	Iowa.....	1912	803.87	788.25	15.62	98.1	1.9
	1907	124.31	124.31	0.00	100.0	0.0		1907	639.84	578.62	61.22	90.4	9.6
	1902	80.55	80.55	0.00	100.0	0.0		1902	378.25	378.25	0.00	100.0	0.0

STREET AND ELECTRIC RAILWAYS—MILES OF TRACK OWNED AND LEASED BY OPERATING COMPANIES:  
1912, 1907, AND 1902—Continued.

Table 33—Contd.													
DIVISION AND STATE.	Census.	Total.	Owned.	Leased.	PER CENT OF TOTAL.		DIVISION AND STATE.	Census.	Total.	Owned.	Leased.	PER CENT OF TOTAL.	
					Owued.	Leased.						Owued.	Leased.
WEST NORTH CENTRAL—Continued.							EAST SOUTH CENTRAL:						
Missouri.....	1912	996.00	993.51	2.49	99.8	0.2	Kentucky.....	1912	493.21	490.02	3.19	99.4	0.6
	1907	921.67	917.07	4.60	99.5	0.5		1907	389.13	385.36	3.77	99.0	1.0
	1902	758.38	397.49	360.89	52.4	47.6		1902	283.95	283.95	.....	100.0	.....
Nebraska.....	1912	243.80	210.10	33.70	86.2	13.8	Tennessee.....	1912	370.28	369.34	0.94	99.7	0.3
	1907	218.73	186.35	32.35	85.2	14.8		1907	297.50	297.50	.....	100.0	.....
	1902	113.66	113.66	.....	100.0	.....		1902	254.20	254.20	.....	100.0	.....
Kansas.....	1912	452.16	450.99	1.17	99.7	0.3	Alabama.....	1912	306.63	301.91	4.72	98.5	1.5
	1907	249.88	248.88	1.00	99.6	0.4		1907	291.66	291.16	0.50	99.8	0.2
	1902	150.26	150.26	.....	100.0	.....		1902	204.72	204.72	.....	100.0	.....
North and South Dakota.	1912	47.61	47.61	.....	100.0	.....	Mississippi.....	1912	117.14	117.14	.....	100.0	.....
	1907	21.09	21.09	.....	100.0	.....		1907	86.40	86.40	.....	100.0	.....
	1902	2.00	2.00	.....	100.0	.....		1902	25.30	25.30	.....	100.0	.....
SOUTH ATLANTIC:							WEST SOUTH CENTRAL:						
Delaware.....	1912	90.37	46.30	44.07	51.2	48.8	Louisiana.....	1912	285.10	155.55	129.55	54.6	45.4
	1907	95.93	84.32	11.61	87.9	12.1		1907	238.52	119.24	119.28	50.0	50.0
	1902	85.61	85.61	.....	100.0	.....		1902	198.52	198.52	.....	100.0	.....
Maryland.....	1912	692.51	643.13	49.38	92.9	7.1	All other West South Central states.	1912	1,091.13	1,085.63	5.50	99.5	0.5
	1907	536.18	525.76	10.42	98.1	1.9		1907	602.70	602.70	.....	100.0	.....
	1902	437.84	431.92	5.92	98.6	1.4		1902	355.76	355.76	.....	100.0	.....
District of Columbia.	1912	214.23	214.23	.....	100.0	.....	MOUNTAIN:						
	1907	176.03	176.03	.....	100.0	.....	Colorado.....	1912	467.07	434.68	33.29	92.9	7.1
	1902	161.97	161.97	.....	100.0	.....		1907	317.37	317.37	.....	100.0	.....
Virginia.....	1912	561.86	429.29	132.57	76.4	23.6		1902	234.53	232.98	1.55	99.3	0.7
	1907	515.54	456.30	59.24	88.5	11.5	Idaho.....	1912	88.93	12.39	76.54	13.9	86.1
	1902	359.30	355.79	3.51	99.0	1.0		1907	44.24	44.24	.....	100.0	.....
West Virginia.....	1912	404.98	392.48	12.50	96.9	3.1		1902	3.50	3.50	.....	100.0	.....
	1907	266.41	255.22	11.19	95.8	4.2	Utah.....	1912	260.18	260.18	.....	100.0	.....
	1902	140.00	140.00	.....	100.0	.....		1907	122.54	114.79	7.75	93.7	6.3
North Carolina...	1912	190.26	161.83	28.43	85.1	14.9		1902	89.04	89.04	.....	100.0	.....
	1907	106.94	85.98	20.96	80.4	19.6	All other Mountain states.	1912	190.24	190.24	.....	100.0	.....
	1902	46.32	46.07	0.25	99.5	0.5		1907	117.24	117.24	.....	100.0	.....
South Carolina....	1912	202.60	158.77	43.83	78.4	21.6		1902	82.41	82.41	.....	100.0	.....
	1907	131.26	131.26	.....	100.0	.....	PACIFIC:						
	1902	76.98	76.98	.....	100.0	.....	Washington.....	1912	1,035.92	1,014.01	21.91	97.9	2.1
Georgia.....	1912	440.63	241.85	198.78	54.9	45.1		1907	764.73	744.80	19.93	97.4	2.6
	1907	354.18	354.18	.....	100.0	.....	California.....	1912	2,605.28	2,472.52	132.76	94.9	5.1
	1902	300.38	300.38	.....	100.0	.....		1907	2,013.49	2,002.81	10.68	99.5	0.5
Florida.....	1912	164.84	152.47	12.37	92.5	7.5		1902	829.10	829.10	.....	100.0	.....
	1907	118.26	117.26	1.00	99.2	0.8	Oregon.....	1912	544.64	544.64	.....	100.0	.....
	1902	61.75	61.75	.....	100.0	.....		1907	253.41	253.41	.....	100.0	.....
								1902	136.67	136.67	.....	100.0	.....

*Leased track.*—There has been a considerable increase in the mileage of leased track since 1907, though the proportion that it forms of the total track was smaller in 1912 than in 1907. The 6,922.91 miles of leased track in 1907 constituted 20.1 per cent of the total, but while the mileage had increased to 7,647.96 in 1912, it then constituted but 18.6 per cent of the total mileage. Leased track was reported by companies operating in 34 states in 1912, and in 2 states—Idaho and Rhode Island—almost 90 per cent of the trackage operated was under lease. In 7 states more than 40 per cent was leased, these 7 states reporting 43.5 per cent of the total leased track. There were 8 states in which not more than 2 per cent of the total mileage was leased, while there was no track leased in 15 states, including the District of Columbia. In 16 states the proportion was less in 1912 than in 1907.

In 1912 the track leased from steam roads formed 5.5 per cent of the total leased trackage; in 1907 it constituted 3.9 per cent of all leased track, and in 1902, 1.5 per cent.

*Trackage rights.*—Track operated under trackage rights is to be considered in determining the total track operated by individual companies. In determining the total miles of track operated in a state or division, trackage rights over the lines of street and electric railway companies are covered by the track mileage reported as owned or leased by the operating companies, but trackage rights over steam railroad lines, not being included in the owned or leased trackage of operating electric railways, must be included in determining the total miles of track over which the street and electric railways for 1907 and 1902 track leased from an operating company was shown as operated under trackage rights, to avoid duplication of trackage in the leased track data. Track operated under trackage rights from steam railroad companies, not exclusively operated by the electric railway company but used in conjunction with the owning companies, was included under leased track. In taking the present census provision was made for showing

the operated track owned by steam railroad companies separately from that owned by street and electric railways, whether such track was leased and operated exclusively or was operated under trackage rights. The statistics for 1907 and 1902 have been revised to make them comparable with the 1912 figures, except that, since leased trackage and trackage rights, if any, from steam roads are not separable, the track shown as leased from steam companies for these years covers both. Track shown as leased from electric companies for all three census years, as here presented, covers that leased from operating as well as nonoperating companies, the amount of the former being given in footnotes.

In 1912, 1,284.82 miles of track was operated under trackage rights, an amount equal to 3.1 per cent of the total track operated. In 1907 trackage rights aggregated 692.28 miles, or 2 per cent of the total, and in 1902, 559.68 miles, or 2.5 per cent of the total. The detailed statistics for track operated under trackage rights from electric companies and from steam companies are given in Table 153 (p. 282), by states.

*Track on private rights of way.*—The large increase in track on private rights of way is an important feature of railway development. In 1912, 14,793.72 miles of track, or 36 per cent of the total track operated, was located on private rights of way, as compared with 10,971.84 miles, or 31.9 per cent, in 1907, and 3,802.07 miles, or 16.8 per cent, in 1902. The increase in miles of track for the period 1902–1907 was 11,826.57 miles, of which increase 7,169.77 miles, or over 60 per cent, was on private rights of way. For the period 1907–1912 the increase in track was 6,661.26 miles, of which 3,821.88 miles, or 57.4 per cent, was on private rights of way. The statistics for miles of track located on public thoroughfares and miles of track located on private rights of way are given in Table 153, above referred to. The per cent distribution of track located on public thoroughfares and on private rights of way in the several geographic divisions is as follows:

DIVISION.	PER CENT DISTRIBUTION OF MILES OF TRACK, ACCORDING TO LOCATION.					
	On public thoroughfares.			On private rights of way.		
	1912	1907	1902	1912	1907	1902
	1912	1907	1902	1912	1907	1902
United States.....	64.0	68.1	83.2	36.0	31.9	16.8
New England.....	83.4	88.3	90.9	16.6	11.7	9.1
Middle Atlantic.....	66.3	68.9	84.7	33.7	31.1	15.3
East North Central.....	52.4	55.3	76.6	47.6	44.7	23.4
West North Central.....	70.0	73.6	86.4	30.0	26.4	13.6
South Atlantic.....	65.6	67.1	73.1	34.4	32.9	26.9
East South Central.....	73.1	76.8	84.3	26.9	23.2	15.7
West South Central.....	73.9	88.3	89.3	26.1	11.7	10.7
Mountain.....	67.8	81.2	94.5	32.2	18.8	5.5
Pacific.....	54.0	61.8	84.6	46.0	38.2	15.4

The greater proportion of street and electric railway track is on streets or public thoroughfares, but the suburban companies often own their rights of way or have obtained the privilege of operating tracks on private ways, and in districts where interurban lines are extensively developed a large portion of the track

is now on private rights of way. Since 1902 track on private ways has increased nearly fourfold, and such track now forms considerably more than one-third of the entire trackage.

States with major portion of track on private rights of way in 1912 were Indiana, with 69.3 per cent; Kansas, with 52.2 per cent; Oklahoma, with 52.4 per cent; Idaho, with 80.8 per cent; and Oregon, with 53.2 per cent. In 1902 the major portion of the track in all states was on public thoroughfares, and in 1907 only two states—Indiana and Idaho—had more than one-half their trackage on private rights of way.

*City and suburban and interurban lines.*—The schedule employed in taking the census of 1912 provided for classification of track as "city and suburban" or "interurban." At the censuses of 1907 and 1902 track was reported as within or without city limits, but this classification was not applicable to Massachusetts and Connecticut, in which states city and township boundaries are coextensive. Statistics to show the growth of city and suburban lines and interurban lines, respectively, are therefore not available. The statistics for track classified as city and suburban and interurban in 1912 are given in Table 153 (p. 283), by geographic divisions and states. The per cent distribution of city and suburban and interurban trackage for the geographic divisions and states is given in Table 35, which follows:

DIVISION AND STATE.	PER CENT DISTRIBUTION OF MILES OF TRACK (BASED UPON TABLE 153).		DIVISION AND STATE.	PER CENT DISTRIBUTION OF MILES OF TRACK (BASED UPON TABLE 153).	
	City and suburban.	Interurban.		City and suburban.	Interurban.
UNITED STATES.....	60.1	39.9	WEST NORTH CENTRAL—Continued.		
GEOGRAPHIC DIVISIONS:			Nebraska.....	89.5	10.5
New England.....	73.8	26.2	Kansas.....	46.2	53.8
Middle Atlantic.....	65.6	34.4	SOUTH ATLANTIC:		
East North Central.....	39.1	60.9	Maryland.....	66.3	33.7
West North Central.....	73.5	26.5	Delaware.....	83.0	12.0
South Atlantic.....	71.1	28.9	District of Columbia.....	100.0	.....
East South Central.....	87.3	12.7	Virginia.....	76.5	23.5
West South Central.....	76.6	23.4	West Virginia.....	36.5	63.5
Mountain.....	66.4	33.6	North Carolina.....	72.6	27.4
Pacific.....	56.4	43.6	South Carolina.....	55.6	44.4
NEW ENGLAND:			Georgia.....	85.2	14.8
Maine.....	49.1	50.9	Florida.....	90.9	9.1
New Hampshire.....	56.7	43.3	EAST SOUTH CENTRAL:		
Vermont.....	72.5	27.5	Kentucky.....	74.3	25.7
Massachusetts.....	73.6	26.4	Tennessee.....	92.5	7.5
Rhode Island.....	97.2	2.8	Alabama.....	100.0	.....
Connecticut.....	82.6	17.4	Mississippi.....	92.2	7.8
MIDDLE ATLANTIC:			WEST SOUTH CENTRAL:		
New York.....	64.9	35.1	Arkansas.....	100.0	.....
New Jersey.....	79.7	20.3	Louisiana.....	95.3	4.7
Pennsylvania.....	61.8	38.2	Oklahoma.....	56.9	43.1
EAST NORTH CENTRAL:			Texas.....	72.1	27.9
Ohio.....	32.5	67.5	MOUNTAIN:		
Indiana.....	22.8	77.2	Montana.....	92.1	7.9
Illinois.....	57.0	43.0	Colorado.....	71.4	28.6
Michigan.....	39.5	60.5	New Mexico.....	89.6	10.4
Wisconsin.....	48.6	51.4	Arizona.....	62.3	37.7
WEST NORTH CENTRAL:			Idaho.....	22.6	77.4
Minnesota.....	93.0	7.0	Wyoming.....	52.0	48.0
Iowa.....	46.9	53.1	Nevada.....	29.3	70.7
Missouri.....	91.7	8.3	Utah.....	65.5	34.5
North Dakota.....	86.2	13.8	PACIFIC:		
South Dakota.....	100.0	.....	Washington.....	58.7	41.3
			Oregon.....	44.7	55.3
			California.....	58.0	42.0

The greatest development of interurban track is found in the East North Central division and the least in the East South Central. The leading state, ranked according to miles of interurban track, is Ohio, with 2,747.42 miles, followed by Indiana, New York, Pennsylvania, and Illinois. Ranked according to ratio of interurban track to all track, the leading state is Idaho, with 77.4 per cent, followed by Indiana, Nevada, Ohio, and West Virginia. In Alabama, Arkansas, District of Columbia, and South Dakota the roads are all classed as city and suburban, and in Rhode Island, Louisiana, Minnesota, Tennessee, Mississippi, Montana, Missouri, and Florida the interurban trackage formed less than 10 per cent of the total.

## ROLLING STOCK.

Table 154 (p. 288) presents comparative statistics for rolling stock for 1912, 1907, and 1902, by geographic divisions and states, and Table 155 (p. 290) gives the statistics in detail for 1912 by geographic divisions and states.

Table 36, which follows, shows the numbers of the different varieties of cars and the electric locomotives reported at the censuses of 1912, 1907, and 1902.

KIND.	CARS—NUMBER AND KIND.								
	Number.			Per cent of total.			Per cent of increase. <sup>1</sup>		
	1912	1907	1902	1912	1907	1902	1902-1912	1907-1912	1902-1907
Total.....	94,016	83,641	66,784	100.0	100.0	100.0	40.8	12.4	25.2
Revenue cars.....	83,956	75,685	61,404	89.3	90.5	92.0	36.7	10.9	23.3
Passenger.....	76,192	70,016	60,200	81.0	83.7	90.3	26.3	8.8	16.1
Closed.....	48,123	40,470	32,658	51.2	48.4	48.9	47.3	19.0	23.9
Open.....	18,993	22,537	24,259	20.2	26.9	36.3	-21.7	-15.7	-7.1
Combination.....									
Closed and open..	7,985	6,442	3,134	8.5	7.7	4.7	154.8	24.0	105.6
Passenger, with baggage, express, freight, or mail.....	1,061	567	239	1.1	0.7	0.4	344.0	87.1	137.2
Express, freight, mail, and baggage..	7,794	5,569	1,114	8.3	6.8	1.7	599.6	40.0	399.9
Service cars—work cars, snow plows, sweepers, etc.....	10,060	7,956	5,380	10.7	9.5	8.0	87.0	26.4	47.9
Prepayment cars.....	16,012			17.0					
Parlor, sleeping, dining, and private cars.	149	118	(?)	0.1	0.1			26.3	
Cars equipped with motors.....	73,779	63,517	50,699	78.5	75.9	75.9	45.5	16.1	25.3
Electric locomotives...	277	117	3					136.8	

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

**Prepayment cars.**—Prepayment cars have been quite generally adopted during the last five years and were reported for the first time in 1912. In the East South Central division 39.9 per cent of all passenger cars were prepayment cars, in the West North Central division 38.7 per cent, and in the other divisions, with the exception of New England and the Mountain states, they are in quite general use.

The growth of freight and express traffic on interurban and rural lines is indicated by the relatively

large increase in express and freight cars. Passenger cars with baggage, express, freight, or mail compartments, and express, freight, mail, and baggage cars, together numbered 8,855 in 1912, as compared with 6,136 in 1907 and 1,353 in 1902, an increase for the decade of 554.5 per cent, while the ratio of increase for passenger cars for the decade was 26.3 per cent.

Table 37 shows the distribution, by states, of the express, freight, mail, and baggage cars for states having 100 cars or more in 1912.

STATE.	EXPRESS, FREIGHT, MAIL, AND BAGGAGE CARS (NUMBER).					
	1912	1907	1902	Increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
United States.....	7,794	5,669	1,114	6,680	2,125	4,555
Illinois.....	1,917	1,384	251	1,666	533	1,133
California.....	1,507	971	48	1,459	536	923
Washington.....	816	837	14	802	-21	823
Oregon.....	494	179	5	489	315	174
New York.....	428	425	181	247	3	244
Iowa.....	398	140	41	357	258	99
Ohio.....	366	305	44	322	61	261
Indiana.....	328	84	8	320	244	76
Pennsylvania.....	200	412	51	149	-212	361
Colorado.....	163	98	1	162	65	97
Maryland.....	163	76	42	121	87	34
Michigan.....	138	98	45	90	40	50
Massachusetts.....	121	91	94	27	30	-3
All other states.....	755	569	286	469	186	283

<sup>1</sup> A minus sign (—) denotes decrease.

It is apparent that the Pacific coast and the North Central states lead in the growth in freight and express business.

**Motor cars.**—The number of cars equipped with motors is the number available for service at one time and is comparable with the number of motor equipments for motor cars as reported in 1907. At the census of 1902 the inquiry was for number of cars with electrical equipment. Table 38 shows the distribution of motor cars, by kind of motors and by number of electric motors, in 1912 and 1907.

Table 38	CARS EQUIPPED WITH MOTORS.					
	KIND AND NUMBER OF MOTORS.	1912	1907	Percent of total.		Per cent of in-crease.
				1912	1907	
Total number .....	73, 779	63, 517	-----	-----	16.2	
Electric motors .....	73, 758	63, 504	100.0	100.0	16.1	
One motor .....	1, 207	629	1.6	1.0	91.9	
Two motors .....	45, 996	45, 660	62.4	71.9	0.7	
Three motors .....	749	422	1.0	0.7	77.5	
Four (or more) motors .....	25, 806	16, 793	35.0	26.4	53.7	
Gasoline motors .....	21	13	-----	-----	61.5	

The detailed figures for motor equipment, by states, in 1912 are given in Table 155, before referred to. In the West North Central and Pacific divisions four-motor cars constitute more than one-half of the motor cars (57.5 and 53.3 per cent, respectively), and in the Mountain states nearly one-half (46.3 per cent).

**Brake equipment.**—Table 39 gives the statistics of cars equipped with hand and other types of brakes for 1912, 1907, and 1902, by geographic divisions. The statistics by states for 1912 will be found in Table 155 (p. 291). Air brakes constitute the bulk of those included under "Other types of brakes." This group represents power brakes as distinguished from hand brakes.

Table 39		CARS—BRAKE EQUIPMENT.					
		Census.	Total number.	Cars equipped with—		Per cent of total with brakes.	
				Hand brakes exclusively.	Other types of brakes.	Hand brakes exclusively.	Other types of brakes.
UNITED STATES..		1912	194,016	40,304	53,360	43.0	57.0
		1907	83,641	49,213	34,428	58.8	41.2
		1902	66,784	53,731	13,053	80.5	19.5
GEOGRAPHIC DIVISIONS:							
New England...		1912	13,845	8,080	5,758	58.4	41.6
		1907	12,774	8,864	3,910	69.4	30.6
		1902	11,500	9,808	1,692	85.3	14.7
Middle Atlantic.		1912	30,507	13,227	17,085	43.8	56.2
		1907	27,884	17,553	10,323	63.0	37.0
		1902	23,263	18,090	5,173	77.8	22.2
East North Central.		1912	21,686	7,107	14,445	33.0	67.0
		1907	20,282	10,195	10,087	50.3	49.7
		1902	15,753	11,807	3,951	74.9	25.1
West North Central.		1912	6,405	1,931	4,457	30.2	69.8
		1907	5,300	2,546	2,754	48.0	52.0
		1902	4,954	4,430	524	89.4	10.6
South Atlantic..		1912	6,923	4,832	2,031	70.4	29.6
		1907	6,002	4,837	1,165	80.6	19.4
		1902	4,604	4,177	433	90.6	9.4
East South Central.		1912	2,675	1,653	993	62.4	37.6
		1907	2,361	1,823	538	77.2	22.8
		1902	1,970	1,856	114	94.2	5.8
West South Central.		1912	2,493	1,675	814	67.3	32.7
		1907	1,816	1,362	454	75.0	25.0
		1902	1,279	1,252	27	97.9	2.1
Mountain.....		1912	1,526	474	1,045	31.1	68.9
		1907	1,030	639	391	62.1	37.9
		1902	690	622	68	90.2	9.8
Pacific.....		1912	7,956	1,225	6,727	15.4	84.6
		1907	6,192	1,389	4,803	22.4	77.6
		1902	2,766	1,695	1,071	61.3	38.7

<sup>1</sup> Includes 352 cars without brakes.

**Electric locomotives.**—There were 277 electric locomotives employed by the street and electric railways in 1912, as compared with 117 in 1907 and 3 in 1902. This number does not include those employed on the electrified divisions of steam roads, and those used for the electric haulage of steam trains through tunnels, etc., which were not included in the statistics.

At the census of 1902 there were reported 422 steam locomotives and 3 electric locomotives, 413 of the steam locomotives being in use on the Manhattan Elevated and Brooklyn Rapid Transit systems. These systems were electrified prior to 1907, and at the census covering that year 92 steam locomotives were reported as used in connection with street and electric

railways. Steam locomotives were not reported in 1912.

The distribution of the electric locomotives by states is given in Table 155. The statistics by geographic divisions are shown in Table 40, which follows:

Table 40	ELECTRIC LOCOMOTIVES.			
	DIVISION.			Per cent of in- crease.
	1912	1907	1902	
United States.....	277	117	3	136.8
New England.....	22	15	.....	46.7
Middle Atlantic.....	39	19	.....	105.3
East North Central.....	56	21	2	166.7
West North Central.....	32	10	.....	220.0
South Atlantic.....	11	3	1	266.7
East South Central.....	3	2	.....	50.0
West South Central.....	5	1	.....	400.0
Mountain.....	10	5	.....	100.0
Pacific.....	99	41	.....	141.5

There were 341 electric locomotives employed in 1912 on the electrified divisions of steam roads, etc., making a total of 618 for all electrified systems and lines. Table 41 shows their distribution by geographic divisions.

Table 41	ELECTRIC LOCOMOTIVES—ALL ELECTRIFIED ROADS AND SYSTEMS: 1912.					
	DIVISION.	Total number.	Street and electric railways.	Tunnel companies not included with street and electric railways.	Steam railroads.	
					Electrified divisions.	Tunnel haulage.
United States.....	618	277	122	189	30	
New England.....	27	22	.....	.....	5	
Middle Atlantic.....	219	39	.....	180	.....	
East North Central.....	189	56	117	4	12	
West North Central.....	32	32	.....	.....	.....	
South Atlantic.....	22	11	.....	2	9	
East South Central.....	3	3	.....	.....	.....	
West South Central.....	5	5	.....	.....	.....	
Mountain.....	15	10	5	.....	.....	
Pacific.....	106	99	.....	3	4	

The 180 electric locomotives in use by steam railroads of the Middle Atlantic division are on the New York divisions of the New York Central & Hudson River and Pennsylvania Railroad systems. The 30 credited to tunnel haulage are employed in the haulage of steam trains through the Hoosac (Mass.) tunnel, the Detroit & St. Clair (Mich.) tunnels, the Baltimore (Md.) tunnel, and the Cascade (Wash.) tunnel.

**Track and rolling stock of companies classified according to income from railway operations.**—The statistics pertaining to track and rolling stock for all operating companies, classified according to size based upon income from railway operations, are given in Table 42, for 1912, 1907, and 1902.

Table 42

TRACK AND ROLLING STOCK—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: 1912, 1907, AND 1902.

	Total.			Class A—\$1,000,000 and over.			Class B—\$250,000 but less than \$1,000,000.			Class C—less than \$250,000.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902	1912	1907	1902
Number of operating companies.....	975	945	817	91	77	44	155	132	85	729	736	688
<i>Track.</i>												
Miles of track.....	41,064.82	34,403.56	22,576.99	21,305.99	15,564.34	8,414.31	9,652.09	8,396.00	4,909.88	10,106.74	10,443.22	9,252.80
Electric.....	40,808.39	34,059.69	21,901.53	21,212.84	15,394.00	8,030.93	9,613.74	8,378.92	4,814.93	9,981.81	10,286.77	9,055.67
Overhead trolley.....	38,958.06	32,501.71	21,290.09	20,074.35	14,487.11	7,645.66	9,080.52	7,969.61	4,743.01	9,803.19	10,044.99	8,900.52
Other electric.....	1,850.33	1,557.98	611.44	1,138.49	906.89	385.27	533.22	409.31	71.02	178.62	241.78	155.15
All other.....	256.43	343.87	675.46	93.15	170.34	383.38	38.35	17.08	94.95	124.93	156.45	197.13
By ownership:												
Owned.....	33,416.86	27,480.65	19,025.85	15,170.72	10,119.09	5,543.67	8,545.22	7,421.84	4,408.87	9,700.92	9,939.72	9,013.31
Leased (including trackage rights from steam roads).....	7,647.96	6,922.91	3,551.14	6,135.27	5,445.25	2,870.64	1,106.87	974.16	441.01	405.82	503.50	239.49
Operated under trackage rights..	1,051.19	692.28	559.68	370.33	198.33	68.04	305.08	151.52	169.67	375.78	342.43	321.97
By location:												
City and suburban.....	24,699.02	.....	.....	15,629.37	.....	.....	4,400.03	.....	.....	4,669.62	.....	.....
Interurban.....	16,365.80	.....	.....	5,676.62	.....	.....	5,252.06	.....	.....	5,437.12	.....	.....
On public thoroughfares.....	26,271.10	23,431.72	18,774.92	15,385.05	12,396.65	7,745.38	5,313.11	5,059.75	4,086.86	5,672.94	5,975.32	6,942.68
On private rights of way.....	14,793.72	10,971.84	3,802.07	5,920.94	3,167.69	668.98	4,338.98	3,336.25	823.02	4,533.80	4,407.90	2,310.12
<i>Rolling stock.</i>												
Cars.....	94,016	83,641	66,784	67,168	55,692	41,702	14,442	14,323	10,802	12,406	13,026	14,280
Passenger.....	70,162	70,016	60,290	56,704	49,004	38,543	10,497	10,675	9,645	8,961	10,337	12,102
All other.....	17,854	13,625	6,494	10,464	6,688	3,159	3,945	3,648	1,157	3,445	2,689	2,178
Electric locomotives.....	277	117	3	119	22	.....	75	52	.....	83	43	3

Table 43 shows the percentages of increase from census to census for the principal items given in Table 42.

Table 43

TRACK AND ROLLING STOCK—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: PER CENT OF INCREASE (BASED ON TABLE 42).<sup>1</sup>

	1902-1912			1907-1912			1902-1907		
	A	B	C	A	B	C	A	B	C
Miles of track.....	153.2	96.6	9.2	36.9	15.0	-3.2	85.0	71.0	12.9
Owned.....	173.7	91.2	7.6	49.9	15.1	-2.4	82.5	66.1	10.3
Leased.....	113.7	151.0	69.5	12.7	13.6	-19.4	89.7	120.9	110.2
Operated under trackage rights	444.3	79.8	16.7	86.7	101.3	9.7	162.1	-10.7	6.4
On public thoroughfares.....	98.5	30.0	-19.7	24.0	5.0	-6.7	60.1	23.8	-13.9
On private rights of way.....	785.1	427.2	96.3	86.9	30.1	1.5	373.5	305.4	93.4
Cars.....	61.1	33.7	-13.1	20.6	0.8	9.0	33.5	32.6	-4.6
Passenger.....	47.1	8.8	-26.0	15.7	1.7	-13.3	27.1	10.7	-14.6
All other.....	231.2	241.0	58.2	56.5	8.1	4.7	111.7	215.3	51.0

<sup>1</sup> A minus sign (—) denotes decrease.

With the exception of track operated under trackage rights, all classes of track and kinds of cars show a greater percentage of increase from 1907 to 1912 for roads included in group A than for those of the smaller groups. In the case of the smaller roads actual decreases are shown for several items.

Table 44 gives the proportion each class of track and kind of car formed of the total for the United States at each census, 1912, 1907, and 1902.

The changes in the proportions that the several classes form of the respective totals show the move-

ment toward larger companies. In the leading items the proportionate gains are largest for class A, and larger for class B than for class C, the latter class showing decreases in many items.

Table 44

TRACK AND ROLLING STOCK—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: PER CENT OF TOTAL (BASED ON TABLE 42).

	Class A.			Class B.			Class C.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
Miles of track.....	51.9	45.2	37.3	23.5	24.4	21.7	24.6	30.4	41.0
Electric.....	52.0	45.2	36.7	23.6	24.6	22.0	24.4	30.2	41.3
Overhead trolley.....	51.5	44.6	35.9	23.3	24.5	22.3	25.2	30.9	41.8
Other electric.....	61.5	58.2	63.0	28.8	26.3	11.6	9.7	15.6	25.3
All other.....	36.3	49.5	56.7	15.0	5.0	14.1	48.7	45.4	29.2
Owned.....	45.4	36.8	29.1	25.6	27.0	23.5	29.0	36.2	47.4
Leased.....	80.2	78.8	80.8	14.5	14.1	12.4	5.3	7.2	6.8
Operated under trackage rights..	35.2	28.6	12.1	29.0	21.9	30.3	35.7	49.5	57.6
City and suburban.....	63.3	.....	.....	17.8	.....	.....	18.9	.....	.....
Interurban.....	34.7	.....	.....	32.1	.....	.....	33.2	.....	.....
Cars.....	71.4	66.6	62.4	15.4	17.1	16.2	13.2	16.3	21.4
Passenger.....	74.5	70.0	63.9	13.8	15.2	16.0	11.8	14.8	20.1
All other.....	58.6	49.1	48.6	22.1	26.8	17.8	19.3	24.1	33.5
Electric locomotives...	43.0	18.8	.....	27.1	44.4	.....	30.0	36.8	100.0

*Track and rolling stock of companies classified as "Elevated and subway" and "Surface."*—A similar presentation of the statistics relating to track and cars is given in Table 45 for companies classified by kind of system, based upon location of tracks on elevated or in subway structures, or on surface ways, the latter including all companies with surface tracks predominating.

Table 45

TRACK AND ROLLING STOCK—COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY," AND AS "SURFACE."									
	Total.		Elevated and subway. <sup>1</sup>		Surface.		Per cent of increase. <sup>2</sup>		
	1912	1907	1912	1907	1912	1907	Total.	Elevated, etc.	Surface.
Number of companies.....	975	945	7	6	968	939	3.2	16.7	3.1
Miles of track.....	41,064.82	34,403.56	517.81	420.40	40,547.01	33,983.16	19.4	23.2	19.3
Electric.....	40,808.39	34,059.89	517.81	420.40	40,290.58	33,639.29	19.8	23.2	19.8
Overhead trolley.....	38,958.06	32,501.71	44.58	25.89	38,913.48	32,475.82	19.9	72.2	19.8
Other electric.....	1,850.33	1,557.98	*473.23	*304.51	1,377.10	1,163.47	18.8	20.0	18.4
All other.....	256.43	343.87	.....	.....	256.43	343.87	-25.4	.....	-25.4
Owned.....	33,416.86	27,480.65	389.85	291.35	33,027.01	27,189.30	21.6	33.8	21.5
Leased.....	7,647.96	6,922.91	127.96	129.05	7,520.00	6,793.86	10.5	-0.8	10.7
On public thoroughfares.../.....	26,272.10	23,431.72	280.17	301.62	25,991.93	23,130.10	12.1	-7.1	12.4
On private rights of way.....	14,792.72	10,971.84	237.64	118.78	14,555.08	10,853.06	34.7	100.1	34.1
Rolling stock:									
Cars.....	94,016	83,641	5,706	4,453	88,310	79,188	12.4	28.1	11.5
Passenger.....	76,162	70,016	5,524	4,320	70,638	65,696	8.8	27.9	7.5
All other.....	17,854	13,625	182	132	17,672	13,492	31.0	37.9	31.0
Electric locomotives.....	277	117	.....	.....	277	117	136.8	.....	136.8

<sup>1</sup> Exclusive of the mixed elevated, subway, and surface systems of Boston, Mass., and Philadelphia, Pa., which are included under "Surface."

<sup>2</sup> A minus sign (—) denotes decrease.

<sup>3</sup> Third rail.

The elevated and subway railways operate in districts of the highest traffic density, and naturally the items for this small group do not form large percentages of the totals of the several items relating to track except in the case of "Other electric," which refers to

track of the third-rail system used on the elevated and subway lines. The car equipment of the roads of this group is relatively large, averaging 11 cars per mile of track in 1912 and 10.6 in 1907, compared with 2.2 and 2.3, respectively, for all other lines.



## CHAPTER V.

### TRAFFIC.

*Passengers, car mileage, and car-hours.*—The statistics pertaining to traffic are given in Table 156 (p. 292) for 1912, 1907, and 1902, by geographic divisions and states. The table shows the miles of track operated, the number of passengers carried, the revenue car-miles, the revenue car-hours, and the average number of revenue passengers carried per mile of track per car-mile and per car-hour. It is impracticable to make comparisons in detail for each company, consequently the statistics will be shown for geographic divisions, states, and classified groups of companies.

The state totals relating to passengers, car-miles, and car-hours represent the aggregates for the companies credited to the respective states, and not the net totals for traffic within the territorial limits of the states, since a number of companies operate track in more than one state. The net trackage within each state is shown in Table 29, but it is not possible so to present the statistics of passengers carried.

Car mileage is given for all companies in 1912 and 1907 and for all but 5 companies in 1902, and car-hours for 92.2 per cent of the companies in 1912, 77.7 per cent in 1907, and 47.7 per cent in 1902. On the basis of revenue passengers, the companies reporting car-hours represent 95.1 per cent of the traffic in 1912, 86.3 per cent in 1907, and 45.6 per cent in 1902. The ratios per mile of track are based upon the total trackage operated. The ratios, as a rule, show an increase in density of traffic, the average number of passengers per mile of track being larger in most of the states in 1912 than in 1907 and larger in 1907 than in 1902. The number of passengers per car-mile, in all but a few instances, is also larger.

*Number of passengers.*—It is probable that more interest centers around the number of passengers carried than around any other feature of the railway service. While the increases in capital, miles of track, rolling stock, etc., show the development of the industry, no other fact is so impressive as the great number of people carried annually on the street and electric railways and the constant increase in passenger traffic.

The total number of passengers in 1912 aggregated 12,135,341,716, as compared with 9,533,080,766 in 1907 and 5,836,615,296 in 1902, the increase being 2,602,260,950, or 27.3 per cent, and 3,696,465,470, or 63.3 per cent, respectively, or 107.9 per cent for the decade. The statistics for 1907 and 1912 include free passengers. This class was not reported separately in 1902 and, if included in that year, probably was reported under the heading "Transfer passengers."

The number of revenue passengers is the basis used for all deductions relating to passengers, since transfer passengers, as a rule, represent a duplication and the number of free passengers has little significance in this connection. Although transfer passengers in some cases pay an additional charge for transfers, the returns do not permit the segregation of passengers paying such extra charge, and in some cases passengers riding on transfer tickets for which an extra charge is made are reported as fare passengers. Table 46 shows the per cent distribution and the per cent increase for revenue passengers, passenger-car mileage, and express, mail, and freight-car mileage, and Table 47 gives the per cent distribution by class of passengers and by geographic divisions for 1912, 1907, and 1902, the proportions being based on the data shown in Table 156.

Table 46		TRAFFIC STATISTICS—PERCENTAGES (BASED ON TABLE 156).					
		Per cent distribution.			Per cent of increase. <sup>1</sup>		
		1912	1907	1902	1902-1912	1907-1912	1902-1907
<b>REVENUE PASSENGERS.</b>							
United States.....		100.0	100.0	100.0	99.9	28.3	55.9
Geographic divisions:							
New England.....		11.0	11.8	13.5	63.6	20.1	36.2
Middle Atlantic.....		36.8	38.2	41.4	77.8	23.8	43.7
East North Central.....		22.6	21.6	20.8	117.8	34.3	62.2
West North Central.....		8.2	8.3	7.4	123.2	27.9	74.6
South Atlantic.....		6.5	6.5	6.2	107.5	26.4	64.2
East South Central.....		2.8	3.0	2.5	128.1	21.7	87.4
West South Central.....		2.8	2.6	1.9	193.5	40.0	109.6
Mountain.....		1.6	1.5	1.3	149.1	36.1	83.0
Pacific.....		7.6	6.6	5.1	198.3	48.2	101.2
<b>REVENUE CAR MILEAGE.</b>							
<i>Passenger.</i>							
United States.....		100.0	100.0	100.0	68.4	19.1	41.4
Geographic divisions:							
New England.....		10.0	10.9	12.8	31.8	8.8	21.3
Middle Atlantic.....		34.9	35.7	35.9	63.7	16.6	40.3
East North Central.....		24.5	24.8	24.4	69.2	17.5	44.0
West North Central.....		8.0	8.0	8.2	64.3	19.0	38.0
South Atlantic.....		6.5	6.6	7.1	54.9	17.2	32.2
East South Central.....		3.0	3.1	2.9	76.5	18.3	49.2
West South Central.....		3.2	2.9	2.8	100.4	34.4	49.1
Mountain.....		1.6	1.4	1.2	116.4	30.1	66.3
Pacific.....		8.2	6.6	4.8	186.4	48.4	93.0
<i>Express, mail, and freight.</i>							
United States.....		100.0	100.0	100.0	46.9	5.5	39.3
Geographic divisions:							
New England.....		8.1	10.1	9.8	21.2	—15.2	43.0
Middle Atlantic.....		13.2	18.3	72.4	—73.2	—24.1	—64.7
East North Central.....		35.3	32.3	8.7	493.2	15.1	415.1
West North Central.....		6.3	3.4	2.5	282.8	95.3	96.0
South Atlantic.....		4.5	2.6	3.8	74.5	84.1	—5.2
East South Central.....		1.7	2.0	0.6	327.0	—13.5	393.7
West South Central.....		1.5	1.9	0.2	884.6	—19.5	1,122.6
Mountain.....		0.7	1.2	0.2	508.4	—35.9	849.1
Pacific.....		28.7	28.1	1.8	2,182.6	7.7	2,020.1

<sup>1</sup> A minus sign (—) denotes decrease.



**Table 47** REVENUE, TRANSFER, AND FREE PASSENGERS—PER CENT DISTRIBUTION (BASED ON TABLE 156).

DIVISION.	Revenue.			Transfer.			Free.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
United States....	78.7	78.1	81.8	20.0	20.9	18.2	1.4	1.0	.....
New England.....	76.2	77.1	79.8	22.6	22.4	20.2	1.2	0.5	.....
Middle Atlantic.....	85.2	80.8	84.7	14.0	18.4	15.3	0.8	0.8	.....
East North Central.....	72.7	75.1	79.5	25.5	23.8	20.5	1.8	1.1	.....
West North Central.....	74.0	74.2	76.6	24.9	24.8	23.4	1.1	1.0	.....
South Atlantic.....	77.9	78.4	79.1	20.6	20.1	20.9	1.4	1.5	.....
East South Central.....	78.6	78.8	87.0	19.3	19.0	12.1	2.1	2.2	.....
West South Central.....	81.9	86.4	92.0	16.2	12.1	8.0	1.9	1.5	.....
Mountain.....	83.2	81.2	83.4	15.0	17.1	16.6	1.8	1.6	.....
Pacific.....	76.3	75.3	78.8	21.3	23.3	21.2	2.4	1.4	.....

Table 48 shows the "per cent ratio" (ratio expressed as percentage) which the number of transfer and free passengers (combined) bears to the number of revenue passengers in each division and state for 1912 and 1907:

**Table 48** PER CENT RATIO OF TRANSFER AND FREE PASSENGERS TO REVENUE PASSENGERS (BASED ON TABLE 156).

DIVISION AND STATE.	PER CENT RATIO OF TRANSFER AND FREE PASSENGERS TO REVENUE PASSENGERS (BASED ON TABLE 156).		DIVISION AND STATE.	PER CENT RATIO OF TRANSFER AND FREE PASSENGERS TO REVENUE PASSENGERS (BASED ON TABLE 156).	
	1912	1907		1912	1907
UNITED STATES....	27.1	28.1			
GEOGRAPHIC DIVISIONS:					
New England.....	31.3	29.7	SOUTH ATLANTIC:		
Middle Atlantic.....	17.4	23.7	Delaware.....	21.4	22.6
East North Central.....	37.5	33.1	Maryland.....	39.2	38.8
West North Central.....	35.1	34.8	Dist. of Columbia.....	34.9	42.5
South Atlantic.....	28.3	27.6	Virginia.....	24.6	14.6
East South Central.....	27.3	26.9	West Virginia.....	6.4	4.4
West South Central.....	22.1	15.8	North Carolina.....	20.1	12.6
Mountain.....	20.2	23.1	South Carolina.....	20.7	16.5
Pacific.....	31.1	32.9	Georgia.....	19.6	20.3
NEW ENGLAND:			Florida.....	25.0	17.6
Maine.....	13.0	10.7	EAST SOUTH CENTRAL:		
New Hampshire.....	12.6	9.6	Kentucky.....	27.7	25.6
Vermont.....	7.7	5.0	Tennessee.....	33.0	34.6
Massachusetts.....	38.1	36.3	Alabama.....	19.3	20.5
Rhode Island.....	16.3	14.4	Mississippi.....	18.1	13.5
Connecticut.....	20.4	19.3	WEST SOUTH CENTRAL:		
MIDDLE ATLANTIC:			Arkansas.....	11.3	22.0
New York.....	16.3	28.1	Louisiana.....	24.4	11.3
New Jersey.....	26.9	25.3	Missouri.....	15.2	16.7
Pennsylvania.....	16.4	14.5	Oklahoma.....	22.8	19.0
EAST NORTH CENTRAL:			Texas.....		
Ohio.....	28.8	26.6	MOUNTAIN:		
Indiana.....	22.2	22.9	Montana.....	13.5	16.4
Illinois.....	49.6	41.2	Colorado.....	24.1	27.5
Michigan.....	29.4	29.4	New Mexico.....	9.4	44.3
Wisconsin.....	30.7	28.8	Arizona.....	4.6	8.3
WEST NORTH CENTRAL:			Idaho.....	10.3	13.6
Minnesota.....	33.5	28.9	Wyoming.....	1.0	.....
Iowa.....	17.2	10.8	Nevada.....	.....	6.6
Missouri.....	43.2	42.3	Utah.....	18.4	25.2
North Dakota.....	7.6	12.5	PACIFIC:		
South Dakota.....	5.5	.....	Washington.....	28.2	28.9
Nebraska.....	23.1	25.2	Oregon.....	33.4	29.3
Kansas.....	16.3	17.9	California.....	31.2	34.7

In 1912 the number of transfer and free passengers was equal to 27.1 per cent of the number of revenue passengers, as compared with 28.1 per cent in 1907. In the Middle Atlantic, Mountain, and Pacific divisions there appears a ratio decrease, and in the other divisions a ratio increase. The ratio was greater in 1912 than in 1907 in 27 states, and less in 21 states, including the District of Columbia, while in 1 state, Michigan, it remained the same.

Diagram 2 (p. 193) shows graphically the revenue passenger traffic for 1912, 1907, and 1902, by states.

*Car mileage.*—The car-mile is in general use for comparative purposes, but statistics and averages based thereon are affected by differences in size of cars, by varying conditions under which they are operated, and by lack of uniformity in the method of computing car-mileage when trailers are used, a motor and trailer being in some cases counted as one and in some cases as two cars. Table 49 gives the per cent of increase in revenue car mileage for the five-year periods 1907–1912 and 1902–1907, and for the decade, by geographic divisions, based upon the statistics reported in Table 156, and the per cent distribution of revenue car mileage as between passenger cars and express, mail, and freight cars.

**Table 49** REVENUE CAR MILEAGE—PER CENT OF INCREASE AND PER CENT DISTRIBUTION (BASED ON TABLE 156).

DIVISION.	Per cent of increase.			Per cent distribution.					
				Passenger.			Express, mail, and freight.		
	1902–1912	1907–1912	1902–1907	1912	1907	1902	1912	1907	1902
United States....	67.9	18.8	41.4	98.1	97.9	97.9	1.9	2.1	2.1
New England.....	31.8	8.3	21.6	98.5	98.1	98.4	1.5	1.9	1.6
Middle Atlantic.....	57.9	16.2	35.9	99.3	98.9	95.8	0.7	1.1	4.2
East North Central.....	72.5	17.4	46.9	97.3	97.3	99.2	2.7	2.7	0.8
West North Central.....	65.7	19.7	38.4	98.5	99.1	99.4	1.5	0.9	0.6
South Atlantic.....	55.1	17.7	31.7	98.7	99.2	98.9	1.3	0.8	1.1
East South Central.....	77.6	17.8	50.7	99.0	98.6	99.6	1.0	1.4	0.4
West South Central.....	101.7	33.6	51.0	99.1	98.6	99.8	0.9	1.4	0.2
Mountain.....	117.5	29.0	63.6	99.2	99.2	99.7	0.8	0.8	0.3
Pacific.....	202.9	45.0	108.8	93.8	91.6	99.2	6.2	8.4	0.8

The increase or decrease in the proportion of express, mail, and freight-car mileage is, in a measure, an indication of the proportionate increase or decrease of such business, although income, which is considered in Chapter VII, is a better basis of comparison.

*Revenue passengers per mile of track.*—The number of revenue passengers per mile of track is a measure of the density of traffic. The extension of lines into rural districts, where travel is relatively light, tends to reduce the average number of passengers carried per mile of track and is a factor that affects comparative averages. Furthermore, the combination of data for companies located in different cities and in cities and rural districts results in an average that may be misleading. In general, however, such an average is an index of the growth in passenger traffic. The statistics given in Table 156 show an increase of 16,034, or 7.4 per cent, in the number of revenue passengers per mile of track for 1912 as compared with 1907, and an increase of 4,263, or 2 per cent, for 1907 as compared with 1902.

The averages by states, excluding the District of Columbia, ranged in 1912 from a minimum of 46,885 in Idaho to a maximum of 461,837 in New York, and in 1907 from a minimum of 25,103 in South Dakota to a maximum of 426,718 in New York. The explanation of the decrease in averages for some states is found in the extension of lines and not in the diminution of traffic on old lines.

*Revenue passengers per car-mile.*—The average number of revenue passengers per passenger-car mile is a deduction that is affected by the size of cars and the method of counting passengers on suburban and inter-urban lines, whether by zones or by trips. There is no basis for determining the extent of these disturbing factors, but in the main the averages have increased. In 1912 the average number of revenue passengers per passenger-car mile for all companies was 5.06, as compared with 4.70 in 1907 and 4.26 in 1902.

The states showing decreases in average number of revenue passengers per passenger-car mile (Table 156) in 1912 as compared with 1907 also, as a rule, show decreases in traffic per mile of track, and the explanation lies, as before stated, in track extensions in rural districts.

*Revenue passengers per passenger-car hour.*—Although car-hour statistics are not kept by all companies, the number reporting is sufficient to furnish a basis for computing averages that will be approximately correct. In 1912 the average number per car hour was 48.38, as compared with 43.06 in 1907, and 33.28 in 1902, the percentages of increase from 1907 to 1912 and from 1902 to 1907 being, respectively, 12.4 and 29.4. In only a few states does there appear to be a decrease for 1912, as compared with 1907 or 1907 as compared with 1902. Of course these figures are affected by changes in size of cars.

*Traffic of maximum density.*—Table 50 presents traffic statistics for selected roads in the cities of New York, Chicago, Philadelphia, and Boston, representing districts of high traffic density.

Table 50		TRAFFIC OF MAXIMUM DENSITY—SELECTED RAILWAYS: 1912, 1907, AND 1902.					
		Census.	Miles of track operated.	Number of revenue passengers.	Passenger car-miles.	Average number of revenue passengers—	
						Per mile of track.	Per car-mile.
New York City (Manhattan and Bronx Boroughs):	Surface, elevated, and subway.	1912	707.74	1,108,237,017	206,840,174	1,565,882	5.38
		1907	651.04	802,067,004	165,075,775	1,322,311	5.22
		1902	610.06	626,977,169	111,031,025	1,229,222	5.65
Surface .....		1912	485.61	442,913,126	66,452,736	912,057	6.67
		1907	461.41	412,779,720	66,283,005	894,605	6.23
		1902	392.92	411,717,824	65,960,182	1,047,841	6.24
Elevated and subway.		1912	222.13	665,323,891	140,387,438	2,995,200	4.74
		1907	190.53	449,287,884	98,792,770	2,358,095	4.55
		1902	117.14	215,259,345	45,071,743	1,837,625	4.78
Chicago:	Surface and elevated.	1912	1,021.35	736,826,675	146,639,590	721,424	5.02
		1907	933.95	548,618,412	122,213,396	587,417	4.49
		1902	855.59	394,656,000	96,546,464	461,268	4.09
Surface .....		1912	829.84	572,512,151	99,031,422	689,907	5.78
		1907	787.35	411,083,347	86,136,759	522,110	4.77
		1902	734.33	294,809,570	69,391,892	401,467	4.25
Elevated .....		1912	191.51	164,314,524	47,608,168	847,551	3.45
		1907	140.60	137,535,065	36,076,637	938,166	3.81
		1902	121.26	99,846,430	27,154,572	823,408	3.08
Philadelphia:	Surface .....	1912	649.72	456,926,814	83,035,669	703,267	5.50
		1907	619.85	424,275,833	81,263,251	684,481	5.22
		1902	475.46	325,801,963	59,375,543	685,235	5.49
Boston:	Surface, elevated, and subway.	1912	500.52	310,310,009	54,564,478	619,975	5.69
		1907	457.65	271,084,815	51,830,188	592,341	5.23
		1902	404.94	222,484,811	45,772,836	549,427	4.86

<sup>1</sup> Includes 47.30 miles of surface tracks.

<sup>2</sup> Includes 20.83 miles of surface tracks.

<sup>3</sup> Includes 9.87 miles of elevated and 8.42 miles of subway tracks.

<sup>4</sup> Includes 7.67 miles of elevated and 3.23 miles of subway tracks.

<sup>5</sup> Includes 456.59 miles of surface, 26.58 miles of elevated, and 17.35 miles of subway tracks.

<sup>6</sup> Includes 433.20 miles of surface, 16.70 miles of elevated, and 7.75 miles of subway tracks.

The maximum density of passenger traffic centers in Manhattan and The Bronx boroughs of New York City, and the average for these boroughs increased by 243,571 passengers per mile of track from 1907 to 1912 and by 93,089 from 1902 to 1907. The increase is essentially all in the traffic of the elevated and subway lines.

The increase in the traffic of these lines was 637,105 revenue passengers per mile of single track, or 27 per cent, from 1907 to 1912, and 520,470, or 28.3 per cent, from 1902 to 1907. Some of the inclined-plane cable companies show high traffic density, owing to the traffic being confined to short lengths of track—fractions of a mile—but, excluding such cable roads, the densest traffic is found in the subway systems of New York City.

Table 51 gives the traffic density statistics for the exclusively cable roads for 1912, 1907, and 1902. The two surface cable roads in 1912 were the California Street Cable Railroad Co. and the Geary Street Park and Ocean Railway Co. of San Francisco, which latter was operated only part of the year and the tracks then removed to make way for the municipal road. The 11 inclined-plane cable roads are located, 4 in Pennsylvania, 3 in California, and 1 each in the states of Minnesota, Ohio, Tennessee, and Virginia.

Table 51		TRAFFIC OF EXCLUSIVELY CABLE ROADS: 1912, 1907, AND 1902.					
		Census.	Number of companies.	Miles of track operated.	Number of revenue passengers.	Passenger car-miles.	Average number of revenue passengers—
							Per mile of track. Per car-mile.
Total.....	1912	13	24.60	15,837,850	1,869,598	643,815	8.47
	1907	10	20.70	11,993,943	1,050,940	579,418	11.41
	1902	12	23.65	16,066,958	2,499,078	679,364	6.42
Inclined plane....	1912	11	6.67	5,575,519	422,942	835,910	13.18
	1907	8	2.91	4,470,450	244,911	1,536,237	18.25
	1902	10	5.11	3,768,835	284,466	737,541	13.25
Surface.....	1912	2	17.93	10,262,331	1,446,656	572,855	7.09
	1907	2	17.79	7,523,493	806,029	422,906	9.33
	1902	2	18.54	12,298,123	2,214,612	663,329	5.55

*Passenger traffic of street and electric railways and steam railroads.*—A comparison of the passenger traffic of street and electric railways and steam railroads, given in Table 52, shows the relatively large and rapid growth of the former.

Table 52		PASSENGER TRAFFIC—STREET AND ELECTRIC RAILWAYS AND STEAM RAILROADS. <sup>1</sup>					
		1912	1907	1902	Per cent of increase.		
					1902-1912	1907-1912	1902-1907
Number of revenue passengers:							
Street and electric railways.	9,545,554,667	7,441,114,508	4,774,211,904	100.0	28.3	55.9	
Steam railroads.	1,004,081,346	873,905,133	649,878,505	54.5	14.9	34.5	
Receipts from passengers:							
Street and electric railways.	\$502,651,637	\$382,132,494	\$233,821,548	115.0	31.5	63.4	
Steam railroads.	660,373,176	564,606,343	372,963,248	77.1	17.0	51.4	

<sup>1</sup> Steam railroad statistics from reports of the Interstate Commerce Commission.

The 1,004,081,346 passengers carried by the steam roads in 1912 traveled an average distance of 33.18 miles. An average distance of travel for the electric-railway passengers is not determinable. The average fare per passenger for street and electric railways was 5.27 cents, as compared with 65.68 cents for the steam roads. The combined passenger receipts for street and electric and steam roads were \$1,163,024,813 in 1912, \$946,738,837 in 1907, and \$606,784,796 in 1902. Of these totals, the street and electric railway passenger receipts constituted 43.2 per cent in 1912, 40.4 per cent in 1907, and 38.5 per cent in 1902.

*Traffic of companies classified according to income from railway operations.*—A study of the statistics for companies classified according to income from railway operations shows a marked increase in the larger classes.

Table 53						
TRAFFIC STATISTICS—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: CLASS A, \$1,000,000 AND OVER; CLASS B, \$250,000 BUT LESS THAN \$1,000,000; CLASS C, LESS THAN \$250,000.						
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies.....	975	945	817	19.3	3.2	15.7
Class A.....	91	77	44	106.8	18.2	75.0
Class B.....	155	132	85	82.4	17.4	55.3
Class C.....	729	736	688	6.0	-1.0	7.0
Miles of track.....	41,064.82	34,403.56	22,576.99	81.9	19.4	52.4
Class A.....	21,305.99	15,564.34	8,414.31	153.2	36.9	85.0
Class B.....	9,652.09	8,396.00	4,909.88	96.6	15.0	71.0
Class C.....	10,106.74	10,443.22	9,252.80	9.2	-3.2	12.9
Passengers:						
Revenue.....	9,545,554,667	7,441,114,508	4,774,211,904	99.9	28.3	55.9
Class A.....	7,635,471,119	5,626,200,180	3,357,796,250	127.4	35.7	67.6
Class B.....	1,148,582,234	1,035,885,754	737,552,043	55.7	10.9	40.4
Class C.....	761,501,314	779,028,574	678,863,611	12.2	-2.2	14.8
Transfer and free.....	2,589,787,049	2,091,966,258	1,062,403,392	143.8	23.8	96.9
Class A.....	2,315,998,173	1,815,692,175	837,046,245	176.7	27.6	116.9
Class B.....	194,959,266	196,273,141	140,733,373	38.5	-0.7	39.5
Class C.....	78,829,610	80,000,942	84,623,774	-6.8	-1.3	-5.4
Car mileage:						
Passenger.....	1,885,870,157	1,583,831,199	1,120,101,944	68.4	19.1	41.4
Class A.....	1,413,227,890	1,119,283,959	712,095,206	98.5	26.3	57.2
Class B.....	271,494,787	250,463,695	192,487,450	41.0	8.4	30.1
Class C.....	201,147,480	214,083,545	215,519,288	-6.7	-6.0	-0.7
Express, mail, and freight.....	35,749,917	33,900,101	24,328,522	46.9	5.5	39.3
Class A.....	20,372,141	16,308,555	19,787,652	3.0	24.9	-17.6
Class B.....	10,096,974	11,970,950	1,873,373	439.0	-15.7	539.0
Class C.....	5,280,802	5,620,596	2,667,497	98.0	-6.0	110.7
Average number of revenue passengers:						
Per mile of track <sup>2</sup> .....	232,556	216,522	212,217	.....	.....	.....
Class A.....	358,372	361,701	399,058	.....	.....	.....
Class B.....	118,998	123,390	150,218	.....	.....	.....
Class C.....	75,484	74,788	74,009	.....	.....	.....
Per car-mile.....	5.06	4.70	4.26	.....	.....	.....
Class A.....	5.40	5.03	4.72	.....	.....	.....
Class B.....	4.23	4.14	3.83	.....	.....	.....
Class C.....	3.79	3.64	3.15	.....	.....	.....

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Exclusive of idle track and track of freight roads.

The average number of revenue passengers per mile of track shows a decrease at each census since 1902 for each class except class C, in which there was a slight increase from census to census.

*Traffic of companies classified as "Elevated and subway" and "Surface."*—Similar comparative statistics are given in Table 54 for the group of "Elevated and subway" roads, and all other roads, designated as "Surface."

Table 54			
TRAFFIC STATISTICS—"ELEVATED AND SUBWAY" AND "SURFACE."			
	1912	1907	Per cent of increase. <sup>1</sup>
Number of companies.....	975	945	3.2
Elevated and subway.....	7	6	16.7
Surface.....	968	939	3.1
Miles of track.....	41,064.82	34,403.56	19.4
Elevated and subway.....	517.81	420.40	23.2
Surface.....	40,547.01	33,983.16	19.3
Passengers:			
Revenue.....	9,545,554,667	7,441,114,508	28.3
Elevated and subway.....	991,062,330	635,653,072	55.9
Surface.....	8,554,492,337	6,805,461,436	25.7
Transfer and free.....	2,589,787,049	2,091,966,258	23.8
Elevated and subway.....	13,760,495	5,051,921	172.4
Surface.....	2,576,026,554	2,086,914,337	23.4
Car mileage:			
Passenger.....	1,885,870,157	1,583,831,199	19.1
Elevated and subway.....	219,374,647	143,268,267	53.1
Surface.....	1,666,495,510	1,440,562,932	15.7
Express, mail, and freight.....	35,749,917	33,900,101	5.5
Elevated and subway.....	92,625	366,208	-74.7
Surface.....	35,657,292	33,533,893	6.3
Average number of revenue passengers:			
Per mile of track <sup>2</sup> .....	232,556	216,522	.....
Elevated and subway.....	1,013,950	1,514,866	.....
Surface.....	211,073	200,386	.....
Per car-mile.....	5.06	4.70	.....
Elevated and subway.....	4.52	4.44	.....
Surface.....	5.13	4.72	.....

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Exclusive of idle track and track of freight roads.

The number of revenue passengers per car-mile necessarily represents the average for all service, as the statistics do not permit a showing of the average number per car-mile during the hours of heavy travel. It would perhaps be expected that the congested traffic on the elevated and subway lines during the rush hours of morning and evening would result in a large average for these lines, but the average is less than that for the surface roads. The congestion during these rush hours is more than offset by lightness of traffic during the intermediate periods.

*Car-hours.*—The car-hour was employed in 1912 by 92.1 per cent of the companies, with 95.1 per cent of the revenue passengers, while this unit was used in 1907 by only 77.6 per cent of the companies, with 86 per cent of the revenue passengers, and in 1902 by only 47.7 per cent of the companies, with 45.6 per cent of the passengers. Table 55 gives the comparative traffic statistics for car-hours.

Table 55

	TRAFFIC STATISTICS—CAR-HOURS.		
	1912	1907	1902
Number of companies.....	975	945	817
Reporting car-hours.....	898	733	390
Not reporting car-hours..	77	211	427
Per cent of total:			
Reporting car-hours.....	92.1	77.6	47.7
Not reporting car-hours..	7.9	22.4	52.3
Revenue car-hours.....	190,478,140	151,338,944	65,860,342
Passenger.....	187,590,223	148,678,052	65,403,237
Express, mail, and freight..	2,887,917	2,660,892	466,055
Number of revenue passengers:			
Total.....	9,545,554,667	7,441,114,508	4,774,211,904
Companies—			
Reporting car-hours..	9,075,785,815	6,401,840,576	2,176,886,559
Not reporting car-hours.....	469,768,852	1,039,273,932	2,597,325,345
Per cent of total:			
Companies—			
Reporting car-hours..	95.1	86.0	45.6
Not reporting car-hours.....	4.9	14.0	54.4
Average number of revenue passengers per passenger-car hour for companies reporting car-hours.....	48.38	43.06	33.28

*Rates of fare.*—The rate of cash fare on nearly all of the street and electric railways is 5 cents. There are, however, exceptions to this rule varying from the 3-cent rate in Cleveland to the 6-cent rate charged in many of the towns of Massachusetts, and also reported for Warehouse Point, Conn., and Laconia, N. H. For the street and electric railways of the country as a whole the average revenue per passenger carried, obtained by dividing the receipts from passengers by the number of revenue passengers carried, was 5.27 cents in 1912, 5.15 cents in 1907, and 4.94 cents in 1902. The increase is due almost entirely to the development of interurban roads and the increasing practice of issuing a single-fare ticket for the entire distance traveled by the passenger, in much the same manner as on steam roads.

Table 56 shows the average revenue per revenue passenger for the different classes of street and electric railways and for steam railroads, for 1912, 1907, and 1902.

Table 56

	TRAFFIC STATISTICS—AVERAGE PASSENGER REVENUE PER REVENUE PASSENGER.		
	1912	1907	1902
STREET AND ELECTRIC RAILWAYS.			
All companies.....	Cents. 5.27	Cents. 5.15	Cents. 4.94
Companies classified according to income from railway operations:			
Class A—\$1,000,000 and over.....	5.08	4.99	4.84
Class B—\$250,000 but less than \$1,000,000.....	6.10	5.61	5.59
Class C—Less than \$250,000.....	5.87	4.98	5.09
Companies classified according to kind of system:			
Elevated and subway.....	5.08	4.97	.....
Surface.....	5.29	5.17	.....
STEAM RAILROADS.			
Revenue per passenger.....	65.68	64.60	60.49
Journey per passenger (miles).....	33.18	31.72	30.30
Revenue per passenger per mile.....	1.99	2.01	1.99

There appears a slight increase in the averages for 1912 as compared with 1907 and for 1907 as compared with 1902. The high averages for roads of class B are due to the inclusion in that group of a large number of the leading interurban lines, some of which report trip passengers rather than zone passengers. Class C is likewise influenced by the same factor to a considerable extent. More than half of the trackage of these two groups is classed as interurban. On the other hand, class A includes most of the large city systems, and only 26.6 per cent of its trackage is classed as interurban.

Table 57 is a summary of the information furnished in answer to the following inquiry: "Fare charged per passenger within city limits. (If line operates in two or more cities, give names of cities, and fare charged in each. If reduced fare is granted by sale of tickets or otherwise, give each rate with short statement of the facts.)"

The returns made to the Bureau of the Census show that a large percentage of the operating street and electric railways offer fares of less than 5 cents to all of their patrons under certain conditions. In most cases the cash fare for a single trip is 5 cents, but tickets for a number of trips are sold at reduced rates. In a few cases in New England the cash fare is 6 cents in winter and 5 cents the rest of the year. The practice of selling workmen's tickets at a reduced rate, while not universal, is becoming more extended. Their use is limited to the hours of travel to and from work, usually from 6 to 8 a. m. and from 5 to 7 p. m. In some cases, as explained in notes at the end of the table, family tickets are sold at reduced rates, also employees' family tickets, police tickets, mail carriers' tickets, etc., and in Manitou, Colo., tickets to residents. By far the most common practice with companies giving reduced rates is the sale of six tickets for 25 cents; although in many cities a greater number—8, or even 10—are sold for that amount. On a considerable number of lines the reduced fare is given only to those who buy tickets to the value of \$1. The usual rule of such companies is to sell 21, 24, or 25 tickets for \$1. Occasionally the purchase of a still larger number of tickets is required in order that the reduced fare may be obtained. In Bakersfield, Cal., 110 tickets are sold for \$5; in Petaluma, Cal., 100 for \$4.25 or 200 for \$7.50; in Meridian, Miss., 500 for \$20; and in Peekskill, N. Y., 1,000 for \$45. In some cases books of tickets are sold with a time limit, as in parts of Illinois, where 100-ride books with a 60-day limit are sold for \$4, but with a 30-day limit for \$3. It is probable that in a number of cases where companies have reported the sale of 25 tickets for \$1, 6 tickets are also sold for 25 cents, the companies reporting only the minimum fare rate by ticket.

## STREET AND ELECTRIC RAILWAYS—RATES OF FARE WITHIN CITY LIMITS BY GEOGRAPHIC DIVISIONS AND STATES.

[See notes at the end of this table, p. 221.]

Table 57	RATES OTHER THAN 5 CENTS.				DIVISION, STATE, AND CITY.	RATES OTHER THAN 5 CENTS.			
	Tickets—Number for amount indicated.	Children—Rate of fare.	School tickets—Rate of fare.	Working-men's tickets—Rate of fare.		Tickets—Number for amount indicated.	Children—Rate of fare.	School tickets—Rate of fare.	Working-men's tickets—Rate of fare.
NEW ENGLAND.					NEW ENGLAND—Contd.				
Maine:					Connecticut:				
Bangor.....		Cents.	Cents.	Cents.	Bristol.....	(15)	Cents.	Cents.	Cents.
Bremer.....			2.5		Danbury.....	21 for \$1.		3	2.5
Brunswick.....			2.5		New Britain.....	do		16 2.5	
Freeport <sup>1</sup> .....	11 for 50 cents.		2.5		New Haven.....			3	
Lewiston <sup>2</sup> .....	do		2.5		Warehouse Point <sup>3</sup> .....			3	
Madison.....	10 for 25 cents.				Waterbury.....	25 for \$1.		16 2.5	
Oldtown.....			2.5		MIDDLE ATLANTIC.				
Rockland.....			2.5		New York:				
Skowhegan.....	10 for 25 cents.				Amsterdam.....	24 for \$1.		2.5	
Topsham.....			2		Auburn.....	22 for \$1.			
New Hampshire:					Ballston Spa.....	100 for \$4.		3.5	
Claremont <sup>4</sup> .....	(4)				Batavia.....	8 for 25 cents.			
Derry.....	50 for \$2.50.		3	\$ 3.75	Brooklyn <sup>17</sup> .....	6 for 25 cents.	3		
Exeter <sup>5</sup> .....	do	2.5		\$ 3.75	Canstee.....	do			
Hampton <sup>6</sup> .....		2.5		\$ 3.75	Cortland.....	24 for \$1.	3		
Hampton Falls.....		2.5			Geneva.....	do		2.5	
Hudson <sup>7</sup> .....					Gloversville.....			2.5	
Keene <sup>7</sup> .....					Hosick Falls <sup>18</sup> .....	6 for 25 cents.			
Laconia <sup>8</sup> .....					Hornell.....	12 for 50 cents.		2.5	
Marlboro <sup>7</sup> .....					Huntington.....			3	
Nashua <sup>9</sup> .....		2.5		\$ 3.75	Ithaca.....				
Newton.....		2.5		\$ 3.75	Jamestown.....	11 for 50 cents.			
Pelham <sup>3</sup> .....		2.5		\$ 3.75	Johnstown.....	24 for \$1.		2.5	
Plaistow.....		2.5		\$ 3.75	Kingston.....	21 for \$1.			
Portsmouth.....			3		New Brighton <sup>19</sup> .....			4	
Salem <sup>3</sup> .....		2.5		\$ 3.75	New York <sup>20</sup> .....		3		
Seabrook.....		2.5		\$ 3.75	Ogdensburg.....	6 for 25 cents.	3		
Swansey <sup>7</sup> .....					Onesida.....	20 for 50 cents.			
Vermont:					Ossining.....	22 for \$1.			
Barre.....			2.5	2.5	Oswego.....	1,000 for \$45.			
Brattleboro <sup>9</sup> .....	20 for \$1.		3	2.5	Peekskill.....	6 for 25 cents <sup>21</sup>		2.5	
Montpelier.....			2.5		Port Chester <sup>22</sup> .....				
Massachusetts:					Poughkeepsie.....	21 for \$1.			
Acton <sup>3</sup> .....					Rochester.....		3		
Amesbury.....			2.5	\$ 3.75	Rome.....		3		
Amherst <sup>8</sup> .....	17 for \$1.		3	3.60	Schenectady.....		3	2.5	
Attleborough.....			2.5		Syracuse.....		3		
Brookfield <sup>8</sup> .....				5.70	Utica.....		3		
Canton <sup>8</sup> .....					Watertown.....	25 for \$1.			
Deerfield <sup>8</sup> .....			3	3.60	Williamsville.....	8 for 15 cents.			
Dracont.....			2.5	\$ 3.75	New Jersey:				
Fall River.....	6 for 25 cents.		10 2.5		Bridgeton.....	6 for 25 cents <sup>22</sup>			
Fitchburg <sup>11</sup> .....			2.5		Newark <sup>24</sup> .....			3	
Franklin.....			2.5		Trenton.....	6 for 25 cents.			
Greenfield <sup>8</sup> .....			3	3.60	Vineland.....			2.72	
Hadley <sup>8</sup> .....			3		Pennsylvania:				
Hanson <sup>8</sup> .....			3		Bloomsburg.....				3.75
Hatfield <sup>8</sup> .....			3	3.60	Butler.....	6 for 25 cents.			
Haverhill <sup>3</sup> .....			2.5	\$ 3.75	Chambersburg.....	do			
Holyoke.....			2.5		Conollsville.....	6 for 25 cents <sup>25</sup>		3.12	
Kingston <sup>8</sup> .....			3		Dubois.....	7 for 25 cents.		2.5	
Lakeville.....			2.5	\$ 3.75	Duquesne.....	25 for \$1.			
Lawrence.....			2.5		Easton.....		3	2.5	
Leominster <sup>11</sup> .....			2.5		Franklin.....		3		
Linwood.....	25 for \$1.		2.5	2.5	Hanover.....	6 for 25 cents.			
Lowell.....			2.5	3.75	Hershey.....	24 for \$1.		2.5	
Marlborough <sup>8</sup> .....			2.5	3.33	Honestead.....	500 for \$20.			
Merrimac.....			2.5	\$ 3.75	Junata.....	22 for \$1.			
Methuen.....			2.5	\$ 3.75	Lancaster.....	6 for 25 cents.			
Middleborough.....			2.5		Littlestown.....	6 for 25 cents.	3		
Milton <sup>8</sup> .....					Lock Haven.....	8 for 25 cents <sup>26</sup>			
Montague <sup>8</sup> .....			3	3.6	McKeesport.....		3		
New Bedford.....	21 for \$1.		2.5	\$ 3.75	McSherrystown.....	22 for \$1 <sup>27</sup>			
Newbury.....			2.5	\$ 3.75	Manch Chunk.....	6 for 25 cents.	2.5		3.33
Newburyport.....			2.5		Mount Carmel.....	11 for 50 cents.			
Newton <sup>8</sup> .....					New Kensington.....		3	2.5	
Northampton <sup>8</sup> .....			3	3.6	Oil City.....				
North Brookfield <sup>8</sup> .....				5.7	Patton.....	50 for \$2.			3
Pembroke <sup>8</sup> .....			3		Philadelphia <sup>28</sup> .....	24 for \$1.			
Pittsfield <sup>12</sup> .....			2.5		Pottsville.....	50 for \$2.25.		2.5	
Plymouth <sup>8</sup> .....			3		Punxsutawney.....	6 for 25 cents <sup>23</sup>	2.5		3.12
Randolph.....			2.5		Shamokin.....	25 for \$1.			
Salisbury.....			2.5	\$ 3.75	Stroudsburg.....	6 for 25 cents.			
Spencer <sup>8</sup> .....				5.7	Sunbury.....	do			
Springfield.....			2.5		Titusville.....	do		3	3
Stoughton <sup>8</sup> .....			2.5		Tyrone.....	do			
Taunton.....			2.5	2.5	Williamsport.....	do <sup>23</sup>			
Warren <sup>8</sup> .....				5.7	York.....				
West Brookfield <sup>8</sup> .....				5.7					
Whately <sup>8</sup> .....			3	3.6					
Whitinsville.....	25 for \$1.		2.5	2.5					
Whitman <sup>8</sup> .....			3						
Worcester <sup>13</sup> .....			2.5	(14)					
Rhode Island:									
Newport.....			2.5						
Woonsocket.....			2.5						

## STREET AND ELECTRIC RAILWAYS—RATES OF FARE WITHIN CITY LIMITS, BY GEOGRAPHIC DIVISIONS AND STATES—Continued.

[See notes at the end of this table, p. 221.]

Table 57—Contd.		RATES OTHER THAN 5 CENTS.						RATES OTHER THAN 5 CENTS.			
DIVISION, STATE, AND CITY.		Tickets—Number for amount indicated.	Children— Rate of fare.	School tickets— Rate of fare.	Working- men's tickets— Rate of fare.	DIVISION, STATE, AND CITY.		Tickets—Number for amount indicated.	Children— Rate of fare.	School tickets— Rate of fare.	Working- men's tickets— Rate of fare.
EAST NORTH CENTRAL.						EAST NORTH CENTRAL— Continued.					
Ohio:						Illinois—Continued.					
Akron	6 for 25 cents		Cents.	Cents.	Cents.	Normal	6 for 25 cents				
Ashtabula	25 for \$1	3				Peoria	12 for 50 cents <sup>36</sup>				
Bellefontaine	6 for 25 cents					Quincy	6 for 25 cents				
Blissfield	8 for 25 cents					Rockford <sup>40</sup>	do. <sup>22</sup>		2		
Brilliant	11 for 50 cents					Springfield	do.				
Cambridge	6 for 25 cents					Sterling	do.				
Canton	do. <sup>22</sup>					Streator	do.				
Chillicothe	do. <sup>22</sup>	2.5				Urbana	( <sup>37</sup> )				
Cincinnati <sup>30</sup>						Michigan:					
Cleveland, cash fare	3 cents					Adrian	6 for 25 cents <sup>32</sup>				
Columbus	8 for 25 cents					Battle Creek	do.				
Conneaut	25 for \$1	3				Bay City	do.				3
Coshocton	7 for 25 cents					Benton Harbor	do.				
Dayton	6 for 25 cents <sup>22</sup>	3				Detroit	do. <sup>41</sup>				
Defiance	do.					Escanaba	do.	42 2.5			
Delaware	do. <sup>22</sup>	2.5				Gladstone	do.	42 2.5			
Findlay	25 for \$1					Ironwood			3		
Fostoria	6 for 25 cents <sup>32</sup>	2.1				Jackson	6 for 25 cents				
Gallipolis	do.					Kalamazoo	do.				
Hamilton	do.					Lansing	do.				
Lancaster	6 for 25 cents <sup>33</sup>					Manistee	11 for 50 cents				
Lima	do.					Marine City	8 for 25 cents				
Mansfield	do. <sup>22</sup>					Menominee	6 for 25 cents	2.5			3.33
Marion	do. <sup>22</sup>	2.5				Morenci	do.				
Middletown	8 for 25 cents					Mount Clemens	8 for 25 cents				
Mingo Junction	11 for 50 cents					Muskegon	25 for \$1				
Mount Vernon	6 for 25 cents					Port Huron	8 for 25 cents				
Nelsonville	30 for \$1					Saginaw	6 for 25 cents		3.12		3.12
Newark	6 for 25 cents					St. Joseph	do.				
Niles	11 for 50 cents					Sault St. Marie	do.				
Piqua	6 for 25 cents					Wisconsin:					
Pomeroy	25 for \$1					Appleton	do.				
Portsmouth	6 for 25 cents <sup>34</sup>	3				Ashland		2.5			
Springfield	do. <sup>22</sup>					Beloit	6 for 25 cents <sup>22</sup>		2		
Steubenville	11 for 50 cents					Fond du Lac	24 for \$1	3			
Tiffin	6 for 25 cents <sup>32</sup>	2.1				Green Bay	6 for 25 cents				
Toledo	do.				3	Hurley			3		
Warren	11 for 50 cents					Janesville	6 for 25 cents <sup>22</sup>				
Xenia	7 for 25 cents <sup>22</sup>					La Crosse		3		2.86	4.17
Yellow Springs	6 for 25 cents <sup>22</sup>					Madison		2.5			
Youngstown	6 for 25 cents <sup>22</sup>					Marinette	6 for 25 cents	2.5			3.33
Zanesville	do. <sup>22</sup>					Merrill	do. <sup>22</sup>	2.5			
Indiana:						Milwaukee	do. <sup>41</sup>				
Anderson	do.					Oshkosh					3.12
East Chicago				2.5		Racine					4.17
Elwood	6 for 25 cents					Sheboygan	6 for 25 cents				
Evansville	do.					Superior	do.				
Fort Wayne	do.					Wausau	do.				
Gary	do.					WEST NORTH CENTRAL.					
Hammond				2.5		Minnesota:					
Indianapolis	6 for 25 cents <sup>32</sup>			2.5		Breckenridge	22 for \$1				
Kokomo <sup>35</sup>	do.			3.12		Dilworth	21 for \$1			4	
Logansport	do.					Moorhead	do.			4	
Madison	do.				3.12	St. Cloud				3	4
Marion	do.					Winona	52 for \$2.50				
Muncie	do.					Iowa:					
New Albany	do.					Burlington	22 for \$1				
Richmond	do. <sup>22</sup>					Centerville	24 for \$1				
Terre Haute	do. <sup>22</sup>					Clear Lake	120 for \$5				
Vincennes	do.					Clinton	6 for 25 cents				2.5
Washington	do.			2.5		Council Bluffs		2.5		3.33	
Whiting				2.5		Dubuque		2.5			2.5
Illinois:						Fort Dodge	6 for 25 cents				
Alton		2.5				Fort Madison	25 for \$1		2.5		2.5
Aurora	6 for 25 cents					Iowa City	22 for \$1				
Belvidere	25 for \$1					Mason City	120 for \$5				
Bloomington	6 for 25 cents <sup>36</sup>					Ottumwa	24 for \$1		3		
Cairo	do. <sup>22</sup>					Missouri:					
Centralia	do.	2.5				Cape Girardeau	25 for \$1				
Champaign	( <sup>37</sup> ) do.					Hannibal	11 for 50 cents		2.5		
Chicago <sup>38</sup>		3				St. Joseph	12 for 50 cents <sup>22</sup>				
Chicago Heights		3				St. Louis		2.5			
Danville	11 for 50 cents <sup>36</sup>			2.5		Webb City	100 for \$4.50				
Decatur	12 for 50 cents <sup>36</sup>					North Dakota:					
Dixon	6 for 25 cents					Fargo	21 for \$1			4	
Elgin	do.				3.57	Grand Forks	do.				
Galesburg	25 for \$1					Wahpeton	22 for \$1				
Galva	do.					South Dakota:					
Joliet	6 for 25 cents					Aberdeen	20 for 90 cents <sup>42</sup>				
Kankakee	25 for \$1										
Kewanee	do.										
Lincoln	6 for 25 cents <sup>39</sup>			2.5							
Lockport	do.										

STREET AND ELECTRIC RAILWAYS—RATES OF FARE WITHIN CITY LIMITS, BY GEOGRAPHIC DIVISIONS AND STATES—Continued.

[See notes at the end of this table, p. 221.]

DIVISION, STATE, AND CITY.	RATES OTHER THAN 5 CENTS.			
	Tickets—Number for amount indicated.	Children—Rate of fare.	School tickets—Rate of fare.	Working-men's tickets—Rate of fare.
<b>WEST NORTH CENTRAL—Continued.</b>				
Nebraska:		Cents.	Cents.	Cents.
Lincoln	6 for 25 cents <sup>44</sup>	2.5	3.33	
Omaha		2.5	3.33	
South Omaha		2.5	3.33	
Kansas:				
Atchison	25 for \$1.	2.08		
Hutchinson	6 for 25 cents			
Iola		2.5		
Manhattan	24 for \$1.			
<b>SOUTH ATLANTIC.</b>				
Delaware:				
New Castle				3
Wilmington	6 for 25 cents			
Maryland:				
Baltimore		3		
Cumberland	6 for 25 cents <sup>46</sup>		2	
Frederick	100 for \$4.			
Hagerstown	do			
Kensington	12 for 50 cents <sup>46</sup>			
District of Columbia:				
Washington	6 for 25 cents			
Virginia:				
Charlottesville		2.5		
Danville	6 for 25 cents		2.5	<sup>46</sup> 5
Lynchburg	do		3.12	
Newport News	do		<sup>47</sup> 2.5	<sup>47</sup> 2.5
Norfolk	do		2.5	2.5
Petersburg	do		2.5	2.5
Portsmouth	do		2.5	2.5
Radford	do		2.5	3
Richmond	do		2.5	2.5
Roanoke	25 for \$1.			
Staunton	6 for 25 cents			
Tazewell	20 for 75 cents			
West Virginia:				
Bluefield	6 for 25 cents		2.5	3
Clarksburg			3	
Fairmont	44 for \$2.		3	
Graham Station			2.5	3
Huntington	25 for \$1.			
Morgantown	do			
Parkersburg	6 for 25 cents <sup>23</sup>			2.5
Wheeling	do			
North Carolina:				
Asheville	do		2.5	
Charlotte	11 for 50 cents.			
Fayetteville	6 for 25 cents <sup>23</sup>			
Greensboro	do	2.5	2.5	3.12
Raleigh	20 for 90 cents.		2.5	
Salisbury	6 for 25 cents			
Wilmington	do			
Winston-Salem	do			3.12
South Carolina:				
Columbia	22 for \$1.			
Greenville	( <sup>48</sup> )			
Spartanburg			2.34	
Georgia:				
Gainesville	24 for \$1 <sup>36</sup>			
Rome			2.5	
Savannah	21 for \$1.	2.5		
Valdosta	25 for \$1 <sup>49</sup>			
Florida:				
Jacksonville			2.5	
Key West			2.5	
Pensacola	21 for \$1.			
St. Augustine	6 for 25 cents			
Tampa			2.5	
<b>EAST SOUTH CENTRAL.</b>				
Kentucky:				
Ashland	25 for \$1.			
Catlettsburg	do			
Frankfort	6 for 25 cents	2.5		
Lexington	do			
Louisville			2.5	
Maysville	25 for \$1 <sup>50</sup>			
Owensboro	6 for 25 cents			
Paducah		2.5	2.5	
Somerset	25 for \$1.			
Tennessee:				
Bristol	6 for 25 cents <sup>23</sup>			
Chattanooga	23 for \$1 <sup>50</sup>		3	
Clarksville	24 for \$1.	2.5		
Jackson	6 for 25 cents			
Knoxville			2.5	
Memphis	11 for 50 cents.			
Nashville	50 for \$2.			
DIVISION, STATE, AND CITY.	RATES OTHER THAN 5 CENTS.			
	Tickets—Number for amount indicated.	Children—Rate of fare.	School tickets—Rate of fare.	Working-men's tickets—Rate of fare.
<b>EAST SOUTH CENTRAL—Continued.</b>				
Alabama:		Cents.	Cents.	Cents.
Birmingham				2.5
Gadsden				3
Mobile	22 for \$1.			3.5
Montgomery	24 for \$1.			3.12



## STREET AND ELECTRIC RAILWAYS—RATES OF FARE WITHIN CITY LIMITS, BY GEOGRAPHIC DIVISIONS AND STATES—Continued.

[See notes at the end of this table.]

Table 57—Contd.					RATES OTHER THAN 5 CENTS.				
DIVISION, STATE, AND CITY.	RATES OTHER THAN 5 CENTS.				DIVISION, STATE, AND CITY.	RATES OTHER THAN 5 CENTS.			
	Tickets—Number for amount indicated.	Children— Rate of fare.	School tickets— Rate of fare.	Working- men's tickets— Rate of fare.		Tickets—Number for amount indicated.	Children— Rate of fare.	School tickets— Rate of fare.	Working- men's tickets— Rate of fare.
PACIFIC.					PACIFIC—Continued.				
Washington:		<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	California:		<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
Bellingham	6 for 25 cents <sup>23</sup>		2.5		Bakersfield	110 for \$5		2.5	
Chehalis	50 for \$2				Eureka			2.5	
Everett <sup>27</sup>			2.5		Exeter <sup>59</sup>			2.5	
North Yakima	6 for 25 cents <sup>24</sup>		2.5		Fresno			2.5	
Olympia	24 for \$1		3.03		Los Angeles <sup>60</sup>			2.5	
Seattle	6 for 25 cents <sup>25</sup>		2.5		Petaluma	100 for \$4.25 <sup>61</sup>			
Spokane	22 for \$1				Sacramento	22 for \$1		2.5	
Tacoma <sup>67</sup>	do		2.5		San Diego			2.5	
Vancouver	50 for \$1				San Francisco			2.5	
Oregon:					San Jose <sup>62</sup>			2.5	
Albany	50 for \$2.25				Santa Cruz <sup>63</sup>			2.5	
Eugene	do				Stockton	23 for \$1		2.5	
North Portland	50 for \$2								
Portland <sup>68</sup>			3.33						
Salem	50 for \$2.25								

<sup>1</sup> And in cities and towns served by Brunswick & Yarmouth Street Railway, except that in Brunswick school tickets are 2 cents.

<sup>2</sup> And in cities and towns served by Lewiston, Augusta & Waterville Street Railway, except that in Brunswick and Topsham school tickets are 2 cents.

<sup>3</sup> Six-cent cash fare in winter.

<sup>4</sup> One hundred tickets (family), \$4; 100 tickets (limited), \$2.50.

<sup>5</sup> Cash fare, 6 cents; excursion summer tickets, 8 for 40 cents.

<sup>6</sup> Twenty tickets for 75 cents, or 6 tickets for 25 cents.

<sup>7</sup> Cash fare, 6 cents; tickets sold on basis of 5 per cent reduction.

<sup>8</sup> Cash fare, 6 cents.

<sup>9</sup> Cash fare, 6 cents; round-trip ticket, 10 cents.

<sup>10</sup> And for any city or town served by Bay State Street Railway Co.

<sup>11</sup> Mail carriers' tickets, 2½ cents.

<sup>12</sup> And in all cities served by Berkshire Street Railway.

<sup>13</sup> And in all cities served by Worcester Consolidated Street Railway Co.

<sup>14</sup> Workingmen's tickets good between various points of the system sold at different rates—30 for \$1, 24 for 90 cents, 20 for 75 cents, 12 for 50 cents, 20 for 50 cents, and 6 for 25 cents.

<sup>15</sup> Fifty-two tickets (40 days), \$2.08.

<sup>16</sup> For pupils attending schools at which tuition is charged in all cities served by the Connecticut Co.

<sup>17</sup> Brooklyn Bridge line, local railroad, 3 cents and 2½ cents.

<sup>18</sup> And in all cities served by Hoosick Falls Railroad Co.

<sup>19</sup> Mail carriers' tickets, 4½ cents.

<sup>20</sup> Joint rate over lines of two companies, 8 cents.

<sup>21</sup> Fifty tickets for \$2.

<sup>22</sup> And all other cities served by New York & Stamford Railway Co.

<sup>23</sup> Twenty-five tickets for \$1.

<sup>24</sup> And all cities served by Public Service Railway Co.

<sup>25</sup> Fifty-two tickets for \$2.

<sup>26</sup> Thirty-three tickets for \$1, good in city of McKeesport only.

<sup>27</sup> One hundred tickets for \$4 (30 days).

<sup>28</sup> For 3 cents additional to 5-cent fare transfer tickets are issued.

<sup>29</sup> Sixty tickets for \$2.

<sup>30</sup> Cash fare, 3 cents on tracks of the Cincinnati, Newport & Covington Railway Co. in Cincinnati.

<sup>31</sup> Twenty tickets for 50 cents on one road; 25 tickets for 50 cents on another road.

<sup>32</sup> Thirty tickets for \$1.

<sup>33</sup> Thirty-three tickets for \$1.

<sup>34</sup> Fifty-four tickets for \$2.

<sup>35</sup> Mail carriers' tickets, 3½ cents.

<sup>36</sup> One hundred tickets for \$4.

<sup>37</sup> One hundred tickets (60 days) for \$4; 100 tickets (30 days) for \$3.

<sup>38</sup> City employees' tickets, 4 cents.

<sup>39</sup> One hundred and fifty tickets, \$5.

<sup>40</sup> Mail carriers' tickets, 3½ cents; paper carriers' tickets, 2½ cents.

<sup>41</sup> On certain lines, 8 tickets for 25 cents.

<sup>42</sup> Under 12 years, free.

<sup>43</sup> One hundred tickets for \$4.25.

<sup>44</sup> Ten tickets for 45 cents.

<sup>45</sup> Fifty tickets for \$1.50.

<sup>46</sup> With return coupon.

<sup>47</sup> And for all cities served by Newport News & Old Point Railway & Electric Co.

<sup>48</sup> Tickets in books of 20 tickets sold for 90 cents when as many as 100 books are purchased by one person or firm.

<sup>49</sup> Two hundred and fifty tickets for \$9.

<sup>50</sup> One hundred tickets for \$3.

<sup>51</sup> Five hundred tickets for \$20.

<sup>52</sup> One hundred tickets for \$4.25.

<sup>53</sup> Employees' families, 60 tickets for \$1.

<sup>54</sup> Rate of fare for clergy, 2½ cents.

<sup>55</sup> To residents.

<sup>56</sup> Company employees, 50 tickets for \$1.25.

<sup>57</sup> Post-office employees, 4 cents.

<sup>58</sup> Police tickets, 1 cent; city employees, 3 cents; mail carriers, 3½ cents; coupon, 2½ cents.

<sup>59</sup> And for all cities served by Visalia Electric Railroad Co.

<sup>60</sup> And for all cities served by Pacific Electric Railway Co.

<sup>61</sup> Two hundred tickets for \$7.50.

<sup>62</sup> And for all cities served by Peninsular Railway Co. and San Jose Railroad.

<sup>63</sup> Mail carriers' tickets, 2 cents; employees' families, 100-ride tickets, \$2.50.

Referring to the rates of fare for children, pupils, and workingmen: A 2.5-cent rate indicates, as a rule, the sale of 10 tickets for 25 cents, though in some cases it is necessary to buy 20 tickets for 50 cents or 40 tickets for \$1. In Beloit, Wis., 50 school tickets are sold for \$1, making a 2-cent school fare.

The 2.08-cent rate indicates the sale of 12 tickets for 25 cents; the 2.78-cent rate, 9 tickets for 25 cents; the 2.86-cent rate, 35 tickets for \$1; the 3-cent rate, a cash fare, or in some cases 40 tickets for \$1.20

and in other cases 100 tickets for \$3; the 3.03-cent rate, 30 tickets for \$1; the 3.12-cent rate, 8 tickets for 25 cents in some cases and 16 tickets for 50 cents in others; the 3.33-cent rate, 15 tickets for 50 cents and 30 tickets for \$1; the 3.57-cent rate, 7 tickets for 25 cents; the 4-cent rate, 25 tickets for \$1; and the 4.17-cent rate, 6 tickets for 25 cents. In Plattsburg, N. Y., workingmen's tickets good for two 5-cent fares, one being outside of the city, are sold 10 for 50 cents.

*Freight, mail, and express business.*—Table 58 gives the comparative statistics for freight, mail, and express business, by geographic divisions, for 1912, 1907,

and 1902, and shows the growth in income therefrom and in number of companies engaged in the respective lines of business.

**Table 58**

Table 58		TRAFFIC STATISTICS—FREIGHT, MAIL, AND EXPRESS: 1912, 1907, AND 1902.										TRAFFIC STATISTICS—FREIGHT, MAIL, AND EXPRESS: 1912, 1907, AND 1902.									
		DIVISION. <sup>1</sup>	Cen- sus.	Number of com- panies re- porting financial data.	Freight.		Mail.		Baggage, ex- press, and milk.		DIVISION.	Cen- sus.	Number of com- panies re- porting financial data.	Freight.		Mail.		Baggage, ex- press, and milk.			
					Number of com- panies re- porting.	Income.	Number of com- panies re- porting.	Income.	Number of com- panies re- porting.	Income.				Number of com- panies re- porting.	Income.	Number of com- panies re- porting.	Income.	Number of com- panies re- porting.	Income.		
United States..	1912	975	406	\$10,165,616	371	\$723,640	381	\$3,687,947	South Atlantic...	1912	107	41	\$519,795	37	\$60,310	33	\$189,703				
	1907	939	342	5,231,215	385	646,575	229	1,560,802		1907	100	41	210,613	45	59,924	15	76,333				
	1902	799	195	1,038,097	286	432,080	117	401,672		1902	75	33	74,735	24	46,999	4	13,187				
New England....	1912	91	43	826,646	59	105,118	38	404,179	East South Cen- tral.	1912	45	14	171,760	14	15,749	7	102,851				
	1907	118	39	286,385	75	103,368	36	261,332		1907	40	17	154,110	17	13,535	3	1,115				
	1902	137	29	178,276	72	69,460	27	32,633		1902	34	6	38,233	8	8,419	2	5,524				
Middle Atlantic..	1912	246	102	1,407,074	93	168,163	100	707,422	West South Central.	1912	79	11	43,507	12	5,816	11	24,735				
	1907	247	82	781,690	95	185,866	67	519,009		1907	50	5	14,191	11	5,586	4	8,149				
	1902	219	50	238,251	73	131,276	38	92,786		1902	32	2	3,026	3	2,237	1	719				
East North Cen- tral.	1912	222	114	3,492,543	90	172,862	121	1,759,893	Mountain.....	1912	40	16	126,632	8	4,951	12	50,883				
	1907	220	100	2,131,237	93	141,888	69	544,870		1907	28	8	128,232	2	2,722	2	1,503				
	1902	177	55	301,692	61	91,652	32	239,526		1902	18	4	50,544	5	3,165	1	34				
West North Central.	1912	85	31	727,275	31	126,797	31	131,229	Pacific.....	1912	60	34	2,850,384	27	63,874	28	317,052				
	1907	73	20	229,821	22	91,563	18	34,485		1907	63	30	1,294,936	25	42,123	15	114,006				
	1902	58	8	24,927	22	53,969	6	13,524		1902	49	11	128,413	18	24,903	6	3,739				

<sup>1</sup> See page 25 (Central Electric Light and Power Stations) for states composing the several geographic divisions.

Two of the operating companies reporting in 1912, namely, the St. Louis and Belleville Electric Railway Co. of Illinois and the Bluff City Railway Co. of Mississippi, were engaged exclusively in freight traffic, and

one, the first named, in 1907. Other exclusively electric freight roads not included in the general tabulation are the Chicago Tunnel Co. of Chicago and the Bingham Central Railway Co. of Utah.

## CHAPTER VI. CAPITALIZATION.

*Basis of statistics.*—The capitalization of street and electric railway companies consists of their capital stock and funded debt. The capital stock of many companies is divided into two classes of securities, common stock and preferred stock, which, as a rule, differ from each other only in the preference given the latter with respect to dividends and with respect to the distribution of assets in case of liquidation, when the preferred shares frequently have to be paid in full before the holders of the common shares receive any benefit of the distribution. The capital represented by funded debt takes a variety of forms, and the dividing line between funded debt and floating debt is not clearly defined. Funded debt is generally indebtedness evidenced by obligations issued in a group by a corporation, bearing a fixed rate of interest, and usually secured by a mortgage on property of the company. It may include mortgage bonds secured by a lien on the road and its franchises, income bonds which are a lien on revenue only, and miscellaneous obligations, such as collateral trust bonds, which comprise liens on specified property distinct from the road and its franchises.

The term "debentures," sometimes used, has no fixed meaning. It is generally used, however, with reference to corporate obligations bearing a fixed rate of interest

which are not secured by mortgage. There are other classes of securities, notably receivers' certificates, which partake of the nature of funded indebtedness, as they take precedence over funded and so-called current liabilities, but as these are necessarily short lived and are soon paid or funded, they are not treated as part of the funded debt.

*Ownership.*—With the exception of the municipal railway of Monroe, La., and a few railways owned by individuals, all of the street and electric railways are operated under corporate ownership. The municipal railway of San Francisco was not completed until just before the close of 1912, and therefore was not included in the report. Neither do the statistics include data for one road at Bismarck owned and operated by the state of North Dakota in connection with the state capitol, and not included in the industry. The investments by owners other than incorporated companies, with a few exceptions, have been included in the total for common stock.

*Capitalization.*—Table 157 (p. 299) presents the statistics of track and capitalization, stock and funded debt, dividends, floating debt and mortgages, and net capitalization per mile of track, by geographic divisions and states, for 1912, 1907, and 1902. These statistics are summarized in Table 59.

STREET AND ELECTRIC RAILWAYS—CAPITALIZATION: 1912, 1907, AND 1902.

	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies <sup>2</sup> .....	1,255	1,230	980	28.1	2.0	25.5
Operating companies.....	970	939	811	19.6	3.3	15.8
Lessor companies.....	285	291	169	68.6	-2.1	72.2
ALL COMPANIES.						
Capitalization.....	\$4,708,568,141	\$3,774,772,096	\$2,308,282,099	104.0	24.7	63.5
Capital stock.....	2,379,346,313	2,097,708,856	1,315,572,960	80.9	13.4	59.5
Common.....	1,970,385,003	1,776,320,076	1,187,042,781	65.9	10.9	49.6
Preferred.....	408,961,310	320,788,780	127,930,179	219.7	27.5	150.8
Funded debt.....	2,329,221,828	1,677,033,240	992,709,139	134.6	38.9	68.9
Floating debt and mortgages.....	302,250,042	282,980,902	( <sup>3</sup> )	.....	6.8	.....
Dividends.....	70,992,218	54,485,274	33,039,171	114.9	30.3	64.9
Interest on funded and floating debt and mortgages.....	113,259,470	81,771,266	46,462,470	143.8	38.5	76.0
OPERATING COMPANIES.						
Capitalization.....	3,956,718,023	2,811,876,374	1,775,468,781	122.9	40.7	58.4
Capital stock.....	1,957,300,149	1,543,269,002	982,909,070	99.1	26.8	57.0
Common.....	1,606,071,539	1,270,590,322	893,735,791	79.7	26.4	42.2
Preferred.....	351,228,610	272,678,680	89,233,279	293.6	28.8	205.6
Funded debt.....	1,999,417,874	1,268,607,372	792,499,711	153.2	57.6	60.1
Floating debt and mortgages.....	285,503,649	225,210,178	( <sup>3</sup> )	.....	26.8	.....
Dividends.....	51,650,117	26,454,732	15,882,110	225.2	95.2	66.6
Interest on funded and floating debt and mortgages.....	98,025,338	68,740,744	38,085,911	157.4	53.8	67.4
LESSOR COMPANIES.						
Capitalization.....	751,850,118	962,895,722	532,813,318	41.1	-21.9	80.7
Capital stock.....	422,046,164	554,439,554	332,603,890	26.9	-23.9	66.7
Common.....	364,312,464	503,329,754	293,906,990	24.0	-28.0	72.3
Preferred.....	57,733,700	43,110,100	38,696,900	49.2	20.3	24.3
Funded debt.....	329,803,954	408,455,868	200,209,428	64.7	-19.0	104.0
Floating debt and mortgages.....	16,755,393	57,776,724	( <sup>3</sup> )	.....	-71.0	.....
Dividends.....	19,342,101	28,030,542	17,157,061	12.7	-31.0	63.4
Interest on funded and floating debt and mortgages.....	15,234,132	18,030,522	8,376,559	81.9	-15.5	115.2

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Exclusive of 5 companies in 1912, 6 in 1907, and 7 in 1902, not represented by capitalization.

<sup>3</sup> Figures not available.

This table also includes, for 1912 and 1907, floating debt and mortgages, because the interest reported for 1912 covered all interest without distinguishing the class of security. The amount of floating debt and mortgages was not reported separately at the census of 1902.

The capitalization statistics apply to all but 5 of the 1,260 companies in 1912. In 1907, 6 of the 1,236 companies, and in 1902, 7 of the 987 companies, failed to report capitalization. The total amounts reported as the par value of common stock for each census include the cash investments of certain municipalities and individuals, but these investments are of such minor importance that the totals are not materially affected thereby.

The amount shown as interest on funded debt, floating debt, and mortgages is the amount charged as the deduction from income, and therefore does not represent the full interest charges, as some companies engaged in construction work charged part of the interest to construction account.

The increase in capitalization is but one of the many factors which should be considered as an indication of the increase in railway construction.

The par value of the outstanding capital stock and bonds reported for 1912 shows an increase of \$933,796,045, or 24.7 per cent, over the total for 1907, while the track mileage represented by capitalization increased by 6,605.86 miles (from 33,833.54 in 1907 to 40,439.40 in 1912), or 19.5 per cent. The increase in capitalization reported for 1907 over that for 1902 was \$1,466,489,997, or 63.5 per cent, and in track mileage owned, 11,597.15 miles, or 51.5 per cent. Of these two factors, the increase in miles of track furnishes the more satisfactory indication of the extent of the actual increase in electric railway development. Comparable with the increase in capitalization (24.7 per cent and 63.5 per cent, respectively, for the two 5-year periods) is the increase in revenue passenger traffic for the same periods, 28.3 per cent and 55.9 per cent, respectively, and the increase in gross income, 36.3 per cent and 71.6 per cent, respectively.

Table 60 shows the per cent distribution of the capitalization in 1912 and 1907, for all companies and for operating and lessor companies, according to class of securities and according to class of companies.

Common stock formed the largest proportion of the total outstanding capitalization at each of the two prior censuses, but the proportion decreased steadily until in 1912 it formed but 41.8 per cent of the total, while the funded debt increased until it formed 49.4 per cent in that year. Preferred stock, while forming but a small fraction of the total capitalization, increased from 5.6 per cent in 1902 to 8.8 per cent in 1912.

Table 60

	Census.	CAPITALIZATION (PERCENTAGES BASED ON TABLE 59).				
		Per cent distribution.			Per cent of total.	
		Total.	Operating companies.	Lessor companies.	Operating companies.	Lessor companies.
Capitalization.....	1912	100.0	100.0	100.0	84.0	16.0
	1907	100.0	100.0	100.0	74.5	25.5
	1902	100.0	100.0	100.0	76.9	23.1
Capital stock.....	1912	50.6	49.5	56.1	82.3	17.7
	1907	55.6	54.9	57.6	73.6	26.4
	1902	56.9	55.4	62.4	74.7	25.3
Common.....	1912	41.8	40.6	48.4	81.5	18.5
	1907	47.1	45.2	52.6	73.2	26.8
	1902	51.3	50.4	54.9	75.3	24.7
Preferred.....	1912	8.8	8.9	7.7	85.9	14.1
	1907	8.5	9.7	5.0	85.0	15.0
	1902	5.6	5.0	7.5	69.8	30.2
Funded debt.....	1912	49.4	50.5	43.9	85.8	14.2
	1907	44.4	45.1	42.4	75.6	24.4
	1902	43.1	44.6	37.6	79.8	20.2

The foregoing does not take into account the capital invested in the form of real-estate mortgages and floating debt, which are generally grouped under current liabilities. The liabilities reported as floating debt and real-estate mortgages represent to a large degree funds used for carrying on the business of the companies, as well as the subscribed capital and bonds, and in a broad sense they constitute invested capital on which profits are realized in the form of interest; in fact, in many cases, funds for betterments and equipment are secured on short-term notes and carried as floating debt. These liabilities were not called for separately in the schedule for 1902, but in 1907 they amounted to \$282,986,902 and in 1912 to \$302,259,042. If these are included under "Capitalization," on the assumption that they are used for construction and equipment purposes or for operating capital, there is obtained a gross capitalization of \$5,010,827,183 for 1912 and \$4,057,758,998 for 1907, of which amounts floating debt and real-estate mortgages formed 6 per cent in 1912 and 7 per cent in 1907.

In order, however, to arrive at the net capitalization per mile of track, it is necessary to deduct the amount of stock and bonds of other electric railway companies and the stock and bonds held as treasury securities by the reporting companies. Furthermore, it is necessary to deduct the amount of investments in other securities and nonrailway properties to determine the net capitalization, inclusive of floating debt and real-estate mortgages, based on street and electric railways exclusively.

Table 61 shows the gross and net capitalization resulting from this arrangement of accounts and the net capitalization based upon street and electric railways exclusively.

Table 61

	CAPITALIZATION, INCLUDING FLOATING DEBT AND REAL-ESTATE MORTGAGES.		
	1912	1907	Per cent of in- crease. <sup>1</sup>
Capital stock.....	\$2,379,346,313	\$2,097,708,856	13.4
Common.....	1,970,385,003	1,776,920,076	10.8
Preferred.....	408,961,310	320,788,780	27.5
Funded debt.....	2,329,221,828	1,677,063,240	38.8
Floating debt and real-estate mortgages.....	302,259,042	282,986,902	6.7
Total.....	5,010,827,183	4,057,758,998	23.5
Stocks and bonds of other electric rail- way companies and treasury securities	360,105,164	237,896,093	51.4
Net capitalization.....	4,650,722,019	3,819,862,905	21.8
Investments in other securities and nonrailway properties.....	105,145,250	136,768,104	-23.1
Net capitalization based on street and electric railways:			
Inclusive of floating debt and real- estate mortgages.....	4,545,576,769	3,683,094,801	23.4
Per mile of track.....	112,405	107,942	4.1
Exclusive of floating debt and real- estate mortgages.....	4,243,317,727	3,400,107,899	24.8
Per mile of track.....	104,930	100,495	4.4

<sup>1</sup> A minus sign (-) denotes decrease.

The capitalization per mile of track is ascertained by dividing the net capitalization by the single-track mileage owned by the companies. The averages of \$104,930 in 1912 and \$100,495 in 1907 are comparable with \$96,287 in 1902. The net capitalization per mile of track for the several divisions and states is given in Table 157 (p. 299) for 1912, 1907, and 1902. These data are summarized in Table 62.

Table 62

DIVISION.	NET CAPITALIZATION PER MILE OF TRACK.			
	1912	1907	1902	Per cent of in- crease: <sup>1</sup> 1902- 1912
United States.....	\$104,930	\$100,495	\$96,287	9.0
New England.....	61,577	54,724	45,441	35.5
Middle Atlantic.....	134,702	140,724	143,284	-6.0
East North Central.....	87,102	87,292	85,122	2.3
West North Central.....	97,807	102,948	106,125	-7.8
South Atlantic.....	125,409	112,013	114,289	9.7
East South Central.....	92,051	93,925	70,742	30.1
West South Central.....	93,272	100,083	67,405	38.3
Mountain.....	77,514	76,358	58,406	32.7
Pacific.....	145,428	102,272	82,761	75.7

<sup>1</sup> A minus sign (-) denotes decrease.

The average net capitalization per mile of track in the several geographic divisions shows a considerable variation during the five years 1907 to 1912. The West South Central division shows a decrease from \$100,083 per mile to \$93,272, or 6.8 per cent, while the capitalization in the Pacific division increased from \$102,272 per mile in 1907 to \$145,428 in 1912, or 42.2 per cent. As stated more fully in a later chapter, these averages are affected by varying proportions of expensive line construction and the inclusion to a greater or less extent of power plants, etc.

As before stated, capitalization is confined to the securities representing continuing or permanent investments—to capital stock and funded debt or bonds—the securities that represent the basic fund for

the conduct of the business and on which its profits or dividends are calculated. Undoubtedly a part of the current liabilities of many street and electric railways should be considered as capitalization, but it is impossible to determine to what extent, and on account of the uncertainty existing in the current liability accounts and their unstable nature they are not included in capitalization statistics except as specially noted.

Table 63 is a summary of the statistics for capital stock, funded debt, and current liabilities for the three census years.

Table 63

	CAPITALIZATION AND CURRENT LIABILITIES.					
	1912	1907	1902	Per cent of increase.		
				1902- 1912	1907- 1912	1902- 1907
Total.....	\$5,315,258,541	\$4,263,243,100	\$2,560,427,534	107.6	24.7	66.5
Capitalization.....	4,708,568,141	3,774,772,096	2,308,282,099	104.0	24.7	63.5
Capital stock.....	2,379,346,313	2,097,708,856	1,315,572,960	80.9	13.4	59.5
Funded debt.....	2,329,221,828	1,677,063,240	992,709,139	134.6	38.9	68.9
Current liabilities..	606,690,400	488,471,004	252,145,435	140.6	24.2	93.7
Floating debt and real-estate mortgages.....	302,259,042	282,986,902	.....	.....	6.8	.....
Floating debt.....	296,161,797	278,927,097	( <sup>1</sup> )	.....	6.2	.....
Real-estate m o r t - gages.....	6,097,245	4,059,805	( <sup>1</sup> )	.....	50.2	.....
Other current liabilities.....	304,431,358	205,484,102	.....	.....	48.2	.....
Per cent of total:						
Capitalization.....	88.6	88.5	90.2	.....	.....	.....
Floating debt and real-estate mortgages.....	5.7	6.7	.....	.....	.....	.....
Other current liabilities.....	5.7	4.8	9.8	.....	.....	.....

<sup>1</sup> Figures not available.

The slight variation in the proportion which current liabilities form of the total capitalization is noteworthy. The total of floating debt, real-estate mortgages, and other current liabilities formed only 9.8 per cent of the aggregate capitalization in 1902, 11.5 per cent in 1907, and 11.4 per cent in 1912. The funded debt has constantly increased until in 1912 it very nearly equaled the total amount of capital stock outstanding.

*Capitalization and cost of construction.*—In making their returns for the balance-sheet inquiry on the schedule, the majority of the companies inserted an amount for the cost of construction, equipment, and real estate that practically equaled the par value of their outstanding stock and bonds. There were, of course, many exceptions to this rule, due largely to the practice followed by some companies of reinvesting surplus earnings in plant and equipment without a corresponding increase in capitalization.

Table 64 compares the net capitalization reported by both operating and lessor companies with the cost of construction, equipment, and real estate, for 1912, 1907, and 1902.

**Table 64**

	NET CAPITALIZATION AND COST OF CONSTRUCTION, EQUIPMENT, AND REAL ESTATE.					
	1912	1907	1902	Per cent of increase.		
				1902-1912	1907-1912	1902-1907
Cost of construction, equipment, and real estate.....	\$4,596,563,292	\$3,537,668,708	\$2,167,634,077	112.0	29.9	63.2
Net capitalization.....	4,243,317,727	3,400,107,899	2,117,619,302	100.4	24.8	60.6
Balance.....	353,245,565	237,560,809	50,014,775			
Per cent of cost of construction:						
Net capitalization.....	92.5	92.5	97.7			
Balance.....	7.5	6.5	2.3			

*Holding companies.*—In addition to the companies for which capital statistics have been presented, there are a large number of holding organizations, including both incorporated companies and unincorporated associations, organized to control the financial policies and management of operating and lessor com-

panies. These companies have capital stock, or participating shares, and funded securities based upon the securities of the operating companies controlled by them. They may be divided into two classes: (a) incorporated companies duly organized as holding corporations; and (b) collateral trusts or voluntary associations managed by boards of trustees and having participating shares, generally both common and preferred, which are handled on the stock exchange on the same basis as the stock of incorporated companies. These shares in some cases have no stated par value, but in case of liquidation the preferred shares are generally rated at \$100, and for statistical purposes, in connection with the statistics of incorporated companies, the shares of these associations have an assigned par value of \$100.

There were 61 holding companies or organizations in 1912 identified largely with the street and electric railway industry. Table 65 shows the capital stock and funded debt of the two classes of companies.

**Table 65**

	HOLDING COMPANIES—CAPITALIZATION: 1912.					
	Number of companies.	Total capitalization.	Capital stock.			Funded debt.
			Total.	Common.	Preferred.	
Total.....	61	\$1,122,031,503	\$711,217,744	\$473,013,858	\$238,203,886	\$410,813,759
Incorporated companies.....	51	959,921,320	589,617,361	415,615,853	174,001,508	370,303,959
Collateral trusts or voluntary associations.....	10	162,110,183	121,600,383	57,398,005	64,202,378	40,509,800
Per cent of total:						
Incorporated companies.....	83.6	85.5	82.9	87.9	73.0	90.1
Collateral trusts or voluntary associations.....	16.4	14.5	17.1	12.1	27.0	9.9

The collateral trusts or voluntary associations are the Chicago City & Connecting Railways of Illinois, and nine Massachusetts associations, namely, Boston Suburban Electric Cos., Boston & Worcester Electric Cos., Massachusetts Electric Cos., Massachusetts Northern Railways, New England Investment & Securities Co., New Hampshire Electric Railways, Southeastern Electric Cos., Springfield Railway Cos., and the Worcester Railways & Investment Co.

Table 66 shows the statistics of capitalization and the dividends and interest paid, for the holding companies in 1912 and 1907.

It is to be noted that the capitalization is based in part upon properties other than electric railways, and that in many cases the apportionment of investments between electric railway properties and nonrailway properties is a matter of estimate. The assets, as reported in 1912, include stocks and bonds and other permanent investments to the amount of \$1,028,853,667, of which sum \$764,475,457, or 74.3 per cent, represents, in the main, electric railways.

The income of the holding companies comes chiefly from dividends and interest on the securities of the controlled companies. A comparison of the divi-

dends with the total par value of stock outstanding is misleading, since not all stock pays dividends.

**Table 66**

	HOLDING COMPANIES.		
	1912	1907	Per cent of increase. <sup>1</sup>
Number of companies.....	61	70	-12.9
Capitalization.....	\$1,122,031,503	\$954,695,373	17.5
Capital stock.....	711,217,744	663,361,153	7.2
Common.....	473,013,858	484,241,086	-2.3
Preferred.....	238,203,886	179,120,072	33.0
Funded debt.....	410,813,759	291,334,215	41.0
Floating debt.....	34,796,043	( <sup>2</sup> )	
Dividends.....	16,697,073	11,353,657	47.1
Interest.....	13,839,644	11,616,034	19.1
Total assets.....	1,234,805,500	1,048,407,343	17.8
Stocks and bonds of electric railway companies.....	764,475,457	\$ 763,858,954	25.8
Stocks and bonds of companies other than electric railways.....	196,427,753		
Treasury securities.....	22,089,133	10,600,200	108.4
Stocks.....	3,582,163	( <sup>2</sup> )	
Bonds.....	18,506,970	( <sup>2</sup> )	
Other permanent investments.....	67,950,457	183,183,377	-62.9
All other assets.....	183,862,790	90,764,812	102.6

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

<sup>3</sup> Reported as stocks and bonds of other electric railway and light companies.

Table 67 analyzes the securities of holding companies with respect to dividends for 1912 and 1907.

Table 67

	HOLDING COMPANIES— ANALYSIS OF DIVIDENDS.	
	1912	1907
<b>CAPITAL STOCK.</b>		
Number of companies reporting.....	61	70
Number of companies declaring dividends.....	42	32
Per cent of total.....	68.9	45.7
Amount on which dividends were declared.....	\$293,806,930	\$285,629,301
Per cent of total capital stock.....	41.3	43.1
Amount of dividends.....	\$16,697,073	\$11,353,657
Average rate (per cent).....	5.7	4.0
<b>COMMON STOCK.</b>		
Number of companies reporting.....	61	168
Number of companies declaring dividends.....	27	16
Per cent of total.....	44.3	23.5
Amount on which dividends were declared.....	\$174,022,225	\$156,882,450
Per cent of total common stock.....	36.8	32.4
Amount of dividends.....	\$11,067,249	\$6,187,389
Average rate (per cent).....	6.4	3.9
<b>PREFERRED STOCK.</b>		
Number of companies reporting.....	36	38
Number of companies declaring dividends.....	25	25
Per cent of total.....	69.4	65.8
Amount on which dividends were declared.....	\$119,784,705	\$128,746,851
Per cent of total preferred stock.....	50.3	71.9
Amount of dividends.....	\$5,629,824	\$5,166,268
Average rate (per cent).....	4.7	4.0

<sup>1</sup> Two companies reported no common stock.

The investments of these 61 holding companies include the securities wholly or in part of 230 oper-

ating companies, chiefly electric railways. In this connection Table 68 shows the income account of the holding companies by states, as reported for 1912, and Table 69 the balance sheet.

The total income reported by the 61 holding companies in 1912 amounted to \$38,046,553. Of these 61 companies, 44 reported a surplus over deductions from income and dividends amounting to \$6,169,329. There were, however, 17 companies which reported deficits for the year amounting to \$831,768, leaving a net surplus of \$5,337,561.

The total assets of holding companies as reported in 1912 amounted to \$1,239,057,329, of which \$764,475,457, or 61.7 per cent, was invested in stocks and bonds of electric railway companies. There were but 7 holding companies in New York. These 7 companies, however, controlled \$444,450,716, or 35.9 per cent of the total investments. The profit and loss surplus for all companies reporting a surplus amounted to \$25,684,620, but a number of companies showed a profit and loss deficit the aggregate of which amounted to \$4,251,739, leaving \$21,432,881 as the net surplus for all companies.

Table 68

Table 68	STATE.	HOLDING COMPANIES—INCOME ACCOUNT: 1912.								
		Number of companies.	Number of operating companies.	Income.	Deductions from income.			Net income.	Dividends.	Surplus.
					Total.	Interest.	Miscellaneous.			
	United States .....	61	230	\$38,046,553	\$16,011,919	\$13,839,644	\$2,172,275	\$22,034,634	\$16,697,073	\$5,337,561
	Illinois.....	6	55	4,532,199	1,661,030	1,571,014	90,016	2,871,169	2,129,552	741,617
	Kentucky.....	4	6	1,239,953	81,452	33,733	47,719	1,158,501	1,121,838	36,663
	Massachusetts.....	9	21	2,876,220	707,495	655,504	51,991	2,168,725	1,949,457	219,268
	New York.....	7	37	14,754,346	7,545,644	6,787,504	758,140	7,208,702	2,912,044	4,296,658
	Pennsylvania.....	17	51	9,418,657	2,815,212	2,043,733	771,479	6,603,445	6,478,227	125,218
	Texas.....	4	11	1,715,980	513,686	433,625	80,061	1,202,294	982,635	219,659
	All other states <sup>1</sup> .....	14	49	3,509,198	2,687,400	2,314,531	372,869	821,798	1,123,320	<sup>2</sup> 301,522

<sup>1</sup> Includes: California, 2; Georgia, 1; Michigan, 1; Minnesota, 1; Missouri, 2; New Hampshire, 1; New Jersey, 3; Ohio, 3.

<sup>2</sup> Deficit.

Table 69

	HOLDING COMPANIES—BALANCE SHEET: 1912.							
	United States.	Illinois.	Kentucky.	Massachusetts.	New York.	Pennsylvania.	Texas.	All other states. <sup>1</sup>
Number of companies.....	61	6	4	9	7	17	4	14
Total—Assets and liabilities.....	\$1,239,057,329	\$114,902,872	\$32,847,254	\$105,274,330	\$444,450,716	\$152,713,178	\$42,625,128	\$346,243,851
<b>ASSETS.</b>								
Stocks and bonds of electric railway companies.....	276,475,457	106,999,059	21,536,297	77,765,986	268,451,954	101,464,040	33,361,622	154,896,499
Stocks and bonds of companies other than electric railway, and other permanent investments.....	264,378,210	560,676	9,504,400	19,515,082	95,471,758	2,585,879	—	136,740,415
Treasury securities.....	22,089,133	1,260,000	582,800	700,300	16,098,320	561,970	844,000	2,041,743
Stocks.....	3,582,163	880,000	328,800	700,300	268,320	—	480,000	924,743
Bonds.....	18,506,970	380,000	254,000	—	15,830,000	561,970	—	1,117,000
Cash and current assets.....	117,934,765	3,186,735	1,189,340	3,406,689	47,551,741	10,242,465	7,975,681	44,382,114
Stock and bond discount, sinking and other special funds, and sundries.....	65,928,025	2,789,002	34,417	3,261,894	16,862,485	36,058,743	398,483	6,523,001
Deficit for companies showing a deficit.....	4,251,739	107,400	—	624,379	14,458	1,800,081	45,342	1,660,079
<b>LIABILITIES.</b>								
Capital stock.....	711,217,744	78,516,800	30,723,407	81,600,383	217,235,029	79,723,910	22,143,300	201,274,915
Common.....	473,013,558	37,508,200	19,943,487	42,398,005	162,547,792	76,595,870	10,143,300	123,877,204
Preferred.....	238,203,886	41,008,600	10,779,920	39,202,378	54,687,237	3,128,040	12,000,000	77,397,711
Funded debt.....	410,813,759	32,281,000	1,468,000	18,509,800	197,870,020	49,902,939	19,017,000	91,756,000
Floating debt.....	34,796,043	355,692	208,000	745,000	13,747,328	6,459,154	139,200	13,140,669
Reserves.....	1,837,644	33,375	115,550	103,940	—	355,245	378,950	347,484
Accounts payable.....	38,792,395	880,934	—	247,826	2,596,911	1,410,374	—	33,656,350
Interest and taxes due and accrued.....	4,246,083	466,877	7,716	151,635	2,787,499	198,329	93,411	541,226
Dividends due.....	1,330,286	562,500	119,375	207,493	270	257,312	—	183,336
Sundries.....	10,838,245	391,307	4,649	—	335,000	5,993,999	13,001	4,100,289
Surplus for companies showing a surplus.....	25,684,620	1,414,387	196,557	3,708,253	9,899,659	8,411,916	840,266	1,243,582
Net surplus.....	21,432,881	1,306,987	196,557	3,083,874	9,855,201	6,611,835	794,924	<sup>3</sup> 416,497

<sup>1</sup> Includes: California, 2; Georgia, 1; Michigan, 1; Minnesota, 1; Missouri, 2; New Hampshire, 1; New Jersey, 3; Ohio, 3.

<sup>2</sup> Includes \$44,562,778 reported as cost of construction, equipment, and real estate.

<sup>3</sup> Net deficit.



*Analysis of dividends and interest.*—The extent to which the street and electric railways of the country afford a return on the capital invested in them is a matter of great interest not only to those directly

connected with the industry but to the public as well. Table 70 presents an analysis of the statistics relating to dividends and interest, for operating and lessor companies combined, for 1912, 1907, and 1902.

Table 70

Table 70	OPERATING AND LESSOR COMPANIES COMBINED—ANALYSIS OF DIVIDENDS AND INTEREST.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
CAPITAL STOCK.						
Number of companies reporting.....	1,260	1,227	974	29.4	2.7	25.9
Number of companies declaring dividends.....	473	398	298	58.7	18.8	33.6
Per cent of total.....	37.5	30.7	30.6			
Amount outstanding.....	\$2,379,346,313	\$2,097,708,856	\$1,315,572,960	80.9	13.4	59.5
Amount on which dividends were declared.....	\$1,267,935,989	\$1,012,929,430	\$644,195,176	96.8	25.2	57.2
Per cent of total.....	53.3	48.3	49.0			
Amount of dividends.....	\$70,992,218	\$54,485,274	\$33,039,171	114.9	30.3	64.9
Average rate (per cent).....	5.6	5.4	5.1			
COMMON STOCK.						
Number of companies reporting.....	1,260	1,227	974	29.4	2.7	25.9
Number of companies declaring dividends.....	401	321	258	55.4	24.9	24.4
Per cent of total.....	31.8	26.2	26.5			
Amount outstanding.....	\$1,970,385,003	\$1,776,920,076	\$1,187,642,781	65.9	10.9	49.6
Amount on which dividends were declared.....	\$997,135,284	\$805,210,600	\$560,326,121	78.0	23.8	43.7
Per cent of total.....	50.6	45.3	47.9			
Amount of dividends.....	\$58,759,715	\$44,960,796	\$28,737,887	104.5	30.7	56.5
Average rate (per cent).....	5.9	5.6	5.1			
PREFERRED STOCK.						
Number of companies reporting.....	266	204	85	212.9	30.4	140.0
Number of companies declaring dividends.....	140	97	40	250.0	44.3	142.5
Per cent of total.....	52.6	47.5	47.1			
Amount outstanding.....	\$408,961,310	\$320,788,780	\$127,930,179	219.7	27.5	150.8
Amount on which dividends were declared.....	\$270,800,705	\$207,718,830	\$83,869,055	222.9	30.4	147.7
Per cent of total.....	66.2	64.8	67.7			
Amount of dividends.....	\$12,232,503	\$9,524,478	\$4,301,284	184.4	28.4	121.4
Average rate (per cent).....	4.5	4.6	5.1			
FUNDED DEBT.						
Number of companies reporting.....	974	992	781	24.7	-1.8	27.0
Per cent of total number.....	77.3	80.8	80.2			
Amount outstanding.....	\$2,329,221,828	\$1,677,063,240	\$992,709,139	134.6	38.9	68.9
Floating debt and real-estate mortgages.....	\$302,259,042	\$282,986,902	( <sup>2</sup> )		6.8	
Amount of interest.....	\$113,259,470	\$81,771,266	\$46,462,470	143.8	38.5	76.0
On funded debt.....	( <sup>2</sup> )	\$71,468,788	\$43,578,961			64.0
On floating debt and real-estate mortgages.....	( <sup>2</sup> )	\$10,302,478	\$2,883,509			257.3

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

Of the 1,260 operating and lessor companies in 1912, 473, or 37.5 per cent, declared dividends on \$1,267,935,989 capital stock, representing 53.3 per cent of the capital stock of all companies. The dividends declared aggregated \$70,992,218, making the average rate of return 5.6 per cent on the stock of the companies declaring dividends. Dividends to the amount of \$58,759,715 were paid on common stock by 401 companies, or 31.8 per cent of the total number, the stock on which dividends were paid constituting 50.6 per cent of the total common stock outstanding, the average rate of return being 5.9 per cent.

There were 266 companies reporting preferred stock, 140 of which paid dividends aggregating \$12,232,503 on 66.2 per cent of the total stock of this class, the average rate of return being 4.5 per cent.

There were 974 companies reporting funded debt, and while the amount of interest on bonds was not called for separately from that on floating debt and mortgages, it is fairly safe to assume that interest was paid on substantially all of the \$2,329,221,828 of funded debt outstanding.

It can not be assumed that the interest disbursements are applicable to the total funded debt, floating debt, and mortgages, aggregating \$2,631,480,870, as in many cases bonds are used as collateral for floating debt, and in some instances interest was not paid, the companies in some cases being in the hands of receivers.

The average rate of dividends on common stock has increased slightly at each census since 1902, while the rate on preferred stock dividends has decreased in practically the same ratio.

*Capitalization per mile of road of street and electric railways and steam roads.*—Table 71 presents a comparison of the capitalization per mile of road of street and electric railways and steam roads. Since the Interstate Commerce Commission computes the relation of capitalization to trackage on the basis of line mileage or length of road, the figures for street and electric railways in Table 71 are also presented on this basis, although the general statistics for street and electric railways are based upon mileage of all tracks.

Table 71

	CAPITALIZATION STATISTICS OF STREET AND ELECTRIC RAILWAYS AND STEAM ROADS: 1912.				
	Total— Street and electric railways and steam roads combined.	Street and electric railways.	Steam roads.	Per cent of total	
				Street and electric railways.	Steam roads.
Miles of road (or first track) represented.....	267,458.22	29,991.42	237,466.80	11.2	88.8
Total capitalization.....	\$24,461,104,405	\$4,708,568,141	\$19,752,536,264	19.2	80.8
Stock.....	11,001,747,134	2,379,346,313	8,622,400,821	21.6	78.4
Funded debt.....	13,459,357,271	2,329,221,828	11,130,135,443	17.3	82.7
Investments in securities and nonrailway properties.....	5,130,188,028	465,250,414	4,664,935,614	9.1	90.9
Net amount not held by railway companies.....	19,330,918,377	4,243,317,727	15,087,600,650	22.0	78.0
Average amount per mile of road.....	72,277	141,484	63,535	.....	.....

The investments in securities and nonrailway properties have been deducted from gross capitalization, but, as stated in the report of the Interstate Commerce Commission, "This assignment to other properties is one that can not be made with any considerable accuracy even by the reporting companies." Funded debt constitutes 56.3 per cent of the gross capitalization of the steam roads and 49.5 per cent of

the electric railways. The funded debt of the street and electric railways averages \$77,663 per mile of roads, as compared with \$46,870 per mile for the steam road.

*Capitalization of companies classified according to income from railway operations.*—Table 72 presents statistics bearing on capitalization, for companies classed according to income from railway operations, for 1912, 1907, and 1902.

STREET AND ELECTRIC RAILWAYS—CAPITALIZATION OF OPERATING AND LESSOR COMPANIES COMBINED, CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: CLASS A, \$1,000,000 AND OVER; CLASS B, \$250,000 BUT LESS THAN \$1,000,000; CLASS C, LESS THAN \$250,000.

Table 72

	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>		
				1902- 1912	1907- 1912	1902- 1907
Number of companies.....	1,260	1,230	980	28.6	2.4	25.5
Class A.....	283	240	132	114.4	17.9	81.8
Class B.....	217	214	133	63.2	1.4	60.9
Class C.....	760	776	715	6.3	-2.1	8.5
Miles of track owned <sup>2</sup> .....	40,439.40	33,833.54	22,389.04	80.6	19.5	51.1
Class A.....	20,976.16	15,346.60	8,386.91	150.1	36.7	83.0
Class B.....	9,544.20	8,336.78	4,877.23	95.7	14.5	70.9
Class C.....	9,919.04	10,150.16	9,124.90	8.7	-2.3	11.2
Capitalization.....	\$4,708,568,141	\$3,774,772,096	\$2,308,282,099	104.0	24.7	63.5
Class A.....	3,251,909,701	2,443,813,815	1,493,396,343	117.8	33.1	63.6
Class B.....	825,806,276	672,081,782	378,056,241	118.4	22.9	77.8
Class C.....	630,852,164	658,876,499	436,829,515	44.4	-4.3	50.8
Capital stock.....	2,379,346,313	2,097,708,856	1,315,572,960	80.9	13.4	59.5
Class A.....	1,575,441,509	1,356,564,140	872,603,911	80.5	16.1	55.5
Class B.....	459,944,577	353,782,282	204,256,078	125.2	30.0	73.2
Class C.....	343,960,227	387,362,434	238,712,971	44.1	-11.2	62.3
Funded debt.....	2,329,221,828	1,677,063,240	992,709,139	134.6	38.9	68.9
Class A.....	1,676,468,192	1,087,249,675	620,792,432	170.1	54.2	75.1
Class B.....	865,861,699	818,299,500	473,800,163	110.5	14.9	83.1
Class C.....	286,891,937	271,514,065	198,116,544	44.8	5.7	37.0
Investments in securities and nonrailway property.....	465,250,414	374,664,197	152,513,997	205.1	24.2	145.7
Class A.....	309,929,016	212,395,041	128,387,757	141.4	45.9	65.4
Class B.....	87,408,903	72,184,390	13,010,932	571.8	21.1	454.8
Class C.....	67,917,495	90,084,766	11,115,308	511.0	-24.6	710.5
Net capitalization.....	4,243,317,727	3,400,107,899	2,155,768,102	96.8	24.8	57.7
Class A.....	2,941,980,685	2,231,418,774	1,365,008,586	115.5	31.8	63.5
Class B.....	738,402,373	599,897,392	365,045,309	102.3	23.1	64.3
Class C.....	562,934,669	568,791,733	425,714,207	32.2	-1.0	33.6
Dividends.....	70,992,218	54,485,274	33,039,171	114.9	30.3	64.9
Class A.....	58,115,534	47,935,519	28,890,831	101.2	21.2	65.9
Class B.....	9,425,960	4,623,123	2,752,125	242.5	103.9	68.0
Class C.....	8,450,724	1,926,632	1,386,215	147.1	79.1	38.0
PER MILE OF TRACK.						
Total capitalization.....	116,435	111,569	103,099	.....	.....	.....
Class A.....	155,029	159,241	178,063	.....	.....	.....
Class B.....	86,524	80,616	77,515	.....	.....	.....
Class C.....	68,600	64,913	47,872	.....	.....	.....
Capital stock.....	58,837	62,001	58,760	.....	.....	.....
Class A.....	75,106	88,395	104,044	.....	.....	.....
Class B.....	48,191	42,436	41,880	.....	.....	.....
Class C.....	34,677	38,163	26,161	.....	.....	.....
Funded debt.....	57,598	49,568	44,339	.....	.....	.....
Class A.....	79,923	70,846	74,019	.....	.....	.....
Class B.....	38,333	38,180	35,635	.....	.....	.....
Class C.....	28,923	26,750	21,712	.....	.....	.....
Net capitalization.....	104,930	100,495	96,287	.....	.....	.....
Class A.....	140,254	145,402	162,755	.....	.....	.....
Class B.....	77,367	71,958	74,847	.....	.....	.....
Class C.....	56,753	56,377	46,654	.....	.....	.....

<sup>1</sup> A minus sign (—) denotes decrease.<sup>2</sup> Exclusive of track for which no capitalization was reported.

Table 73 gives the per cent distribution of the several items, by classified groups.

Table 73	Census.	CAPITALIZATION—PER CENT DISTRIBUTION (BASED ON TABLE 72).		
		Class A.	Class B.	Class C.
Number of companies.....	1912	22.5	17.2	60.3
	1907	19.5	17.4	63.1
	1902	13.5	13.6	73.0
Miles of track.....	1912	51.9	23.6	24.5
	1907	45.4	24.6	30.0
	1902	37.5	21.8	40.8
Capitalization.....	1912	69.1	17.5	13.4
	1907	64.7	17.8	17.5
	1902	64.7	16.4	18.9
Capital stock.....	1912	66.2	19.3	14.5
	1907	64.7	16.9	18.5
	1902	60.3	15.5	18.1
Funded debt.....	1912	72.0	15.7	12.3
	1907	64.8	19.0	16.2
	1902	62.5	17.5	20.0
Investments in securities and nonrailway property.....	1912	66.6	18.8	14.6
	1907	56.7	19.3	24.0
	1902	84.2	8.5	7.3
Net capitalization.....	1912	69.3	17.4	13.3
	1907	65.6	17.6	16.7
	1902	63.3	16.9	19.8
Dividends.....	1912	81.9	13.3	4.9
	1907	88.0	8.5	3.5
	1902	87.4	8.3	4.2

It should be remembered that class A includes the companies operating in urban districts of highest density. The percentage of increase from 1907 to 1912 in capital stock reported by companies of class A was much lower than the percentage of increase in trackage, while the percentage of increase in funded debt was much greater. The trackage of this group increased 36.7 per cent; capital stock, 16.1 per cent; and funded debt, 54.2 per cent. In class C, or the group having an income of less than \$250,000, there was a slight decrease in both trackage and capital stock, while the funded debt increased by 5.7 per cent.

It may be noted that while the average total and net capitalization per mile of track increased 4.3 per cent during the last five-year period, the increase was in funded debt only.

*Capitalization of companies classified as "Elevated and subway" and "Surface."*—Table 74 gives the capitalization statistics for the group of elevated and subway roads in comparison with all other roads, which are essentially surface and are so designated for 1912 and 1907.

The small group of elevated and subway systems represents the most expensive construction and the highest investment per mile of track for any class. It comprised 7 operating and 2 lessor companies in 1912, and 6 operating and 3 lessor companies

in 1907. The Hudson tube system has been the chief factor in increasing the average net capitalization per mile of track. The increase in miles of single track for the group for the period 1907–1912 was 91.53 miles, but the increase in net capitalization was \$149,251,535, or an average of over \$1,630,000 per mile of track, if we charge the increase in capitalization entirely to the new trackage.

Table 74

Table 74	CAPITALIZATION STATISTICS—ELEVATED AND SUBWAY, AND SURFACE.		
	1912	1907	Per cent of increase. <sup>1</sup>
Number of operating and lessor companies.....	1,260	1,230	2.4
Elevated and subway.....	9	9	.....
Surface.....	1,251	1,221	2.5
Miles of track owned <sup>2</sup> .....	40,439.40	33,833.54	19.5
Elevated and subway.....	508.33	416.80	22.0
Surface.....	39,931.07	33,416.74	19.5
Capitalization.....	\$4,708,568,141	\$3,774,772,086	24.7
Elevated and subway.....	438,820,350	294,532,500	49.0
Surface.....	4,269,747,791	3,480,239,586	22.7
Capital stock.....	2,379,346,313	2,097,708,856	13.4
Elevated and subway.....	206,881,350	160,745,500	28.7
Surface.....	2,172,464,963	1,936,963,356	12.2
Funded debt.....	2,329,221,828	1,677,063,240	38.9
Elevated and subway.....	231,939,000	133,737,000	73.4
Surface.....	2,097,282,828	1,543,276,240	35.9
Investments in securities and nonrailway property.....	465,250,414	374,664,197	24.2
Elevated and subway.....	22,955,047	27,918,732	-17.8
Surface.....	442,295,367	346,745,465	27.6
Net capitalization.....	4,243,317,727	3,400,107,899	24.8
Elevated and subway.....	415,865,303	286,613,768	56.0
Surface.....	3,827,452,424	3,113,494,131	22.1
PER MILE OF TRACK.			
Total capitalization.....	116,435	111,569	4.4
Elevated and subway.....	863,259	706,652	22.2
Surface.....	106,928	104,147	2.7
Capital stock.....	58,837	62,001	-5.1
Elevated and subway.....	405,982	385,660	5.5
Surface.....	54,405	57,964	-6.1
Funded debt.....	57,598	49,568	16.2
Elevated and subway.....	466,277	320,986	42.1
Surface.....	52,523	46,183	13.7
Net capitalization.....	104,930	100,495	4.4
Elevated and subway.....	818,101	639,068	27.0
Surface.....	95,851	93,770	2.2

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Exclusive of track for which no capitalization was reported.

*Capitalization, by states.*—The statistics as to capitalization, by states, are given in Table 157 (p. 299). The total for a state or geographic division is the aggregate capitalization of the operating and lessor companies credited thereto, each lessor company being credited to the state of the operating company. As a result, New York receives credit for the entire capitalization of the Hudson tube system, although 11.68 miles of the track is in New Jersey. Changes in organization have in some cases changed the states to which certain companies have been accredited at different censuses, but such changes are not important.

Diagram 3 (p. 193) shows graphically the capitalization, by states, for 1912, 1907, and 1902, for all states with more than \$10,000,000 in 1912.

## CHAPTER VII.

### FINANCIAL OPERATIONS.

#### INTRODUCTION.

*Form of accounting.*—The reports of the financial transactions of street and electric railways conform to the system of accounting adopted by the United States Interstate Commerce Commission and by the American Electric Railway Accountants' Association. In cases where the method of accounting in use by a reporting company differed from the standard form, the differences, as a rule, could be readily adjusted. Adjustments in the statistics for 1907 and 1902, necessary to make them comparable with those for 1912, have been made where possible. The accounts, "Cleaning and sanding track" and "Removal of snow and ice," under "Operation of cars" in the 1907 report, have been transferred to "Maintenance of way;" "Hired equipment," formerly under "Operation of cars," has been transferred to "General expense;" and "Advertising and attractions," formerly under "General expense," now appears under "Traffic."

As a rule, the detailed statistics were obtained from bookkeeping entries. In only a few cases was it necessary to resort to estimates for the segregation of totals. In such cases the totals were distributed on a per cent basis of distribution derived from the combined totals of operating expense for 20 selected railways for the census of 1912.

Parks, summer hotels, theaters, and pleasure resorts operated by electric railways for the purpose of attracting traffic are treated as parts of the railway systems. The net income (or net expense) is included in the railway income account, and the cost or value of such properties is regarded as a part of the assets of the railways.

In the case of an electric railway operating a light and power plant that could not supply separate data for the two industries, the railway report included the gross income and expenses of the light and power plant, the cost of construction and equipment forming a part of the total reported for the railway company. In some cases the operating expense accounts of the light and power department and the railway department were merged in the detailed expense accounts, while in other cases the expenses of the light and power department were not included in the detailed accounts but were reported separately. The accounts are so presented as to show the total expenses of the light and power departments, whether included in the detailed accounts or reported separately.

In the case of a company carrying on other business in connection with the operation of an electric rail-

way, the net income from the nonrailway industry and the total taxes and fixed charges were included in the income account, and the cost or value of the nonrailway plant in the balance sheet as "Other permanent investments." An exception to the rule was made in the case of two companies operating ferries, the ferry service being closely allied to the railway operations, and in the case of one company having a large office building not separable from terminal railway property. The income, expenses, etc., of these companies were therefore treated as part of the corresponding accounts of the railways.

References have been made to companies operated for less than a full year, companies operated for the purpose of holding franchises, companies operated in connection with a college or hotel during the college term or summer season, etc., and a few exclusively horse railroad companies, 47 companies in all, which under the present development of the industry are not in the same class with companies operated during the full year for traffic. These 47 companies are included in a group designated as "Miscellaneous." All other companies are classified according to whether or not they furnish light and power service in connection with their railway operations. The inclusion of these companies does not materially affect the financial results of operations for all companies, as shown by subsequent tables. The track and traffic statistics for this miscellaneous group for 1912, and for the part-time companies for 1907 and 1902, are as follows:

	TRACK AND TRAFFIC OF COMPANIES CLASSIFIED AS "MISCELLANEOUS."		
	1912	1907 <sup>1</sup>	1902 <sup>1</sup>
Number of companies.....	47	55	57
Miles of track.....	356.33	800.16	831.17
Number of revenue passengers.....	13,175,329	12,269,577	37,738,491
Car mileage.....	3,825,588	5,279,809	13,020,048

<sup>1</sup> Operated only a part of the year.

In addition to these 47 companies, there were a few companies whose operations, though largely confined to the summer or tourist season, assumed considerable proportions. As their organization expense, taxes, and other fixed charges were accruing and payable for the entire year, they were treated as operating the whole year and not included in the miscellaneous group.

*Totals for states.*—The totals reported for financial data for states do not represent the exact income, expense, etc., as the case may be, chargeable to the traffic within the state lines, but cover the traffic of the companies credited to the respective states. A considerable

number of companies operate tracks in more than one state. Thus New York is credited with the traffic and financial data incident to 133.12 miles of track located outside the state, and the traffic and financial data applying to 173.03 miles of track located in Pennsylvania are included in the totals for adjoining states. The net trackage and income from railway operations chargeable thereto for the various states are given in Table 123 (p. 259).

#### INCOME ACCOUNT.

All income from railway operations originates with the operating companies, but a portion of it is paid as rentals to nonoperating lessor companies and is reported by them as income. This requires the preservation of the distinction between operating and lessor companies, and reports were therefore secured from the nonoperating lessor companies at the present census and in 1907. The statistics for lessor companies in 1902 were largely compiled from the rentals reported as paid by the operating companies and from information obtained from street railway journals and similar sources.

**Gross income.**—The gross income of the 1,260 operating and lessor companies was \$621,535,884 in 1912, of which amount \$35,144,521 was reported by the lessor companies as income from rentals paid by the operating companies. Excluding this duplication, the total income for all companies amounted to \$586,391,363. This total includes a considerable income derived from sources other than railway operations, by both operating and lessor companies. One of the most important of these items is \$7,182,933 reported as interest on bonds and dividends on stock of other electric railways. This involves a further duplication in the statistics of gross income as reported by all companies, since it represents the income from electric railway securities held by other operating railway companies. Table 75 gives the comparative statistics of the income of lessor and operating companies, for 1912, 1907, and 1902.

	INCOME OF OPERATING AND LESSOR COMPANIES COMBINED.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Gross income.....	\$621,535,884	\$477,657,503	\$276,643,526	124.7	30.1	72.7
Duplications.....	42,327,454	50,756,551	26,116,884	62.1	-16.6	94.3
Rentals from operating companies.....	35,144,521	47,500,933	26,116,884	34.6	-26.0	81.9
Income from interest on bonds and dividends on stock of other electric railway companies.....	7,182,933	3,255,618	( <sup>2</sup> )	.....	120.6	.....
Net income.....	579,208,430	426,900,952	250,526,642	131.2	35.7	70.4

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

Such items as operating earnings, operating expenses, and net earnings from operation pertain exclusively to operating companies, and the gross income

for these companies is shown in Table 76, while the income of the lessor companies and the net or condensed income of operating and lessor companies combined will be shown in later tables.

ACCOUNT.	GROSS INCOME OF OPERATING COMPANIES, BY SOURCE.					
	1912	1907	1902	Per cent of increase.		
				1902-1912	1907-1912	1902-1907
Gross income.....	\$585,930,517	\$429,744,254	\$250,504,627	133.9	35.3	71.6
Operating revenues.....	567,511,704	418,187,858	247,553,999	129.2	35.7	68.9
Passenger.....	502,651,637	382,132,494	233,821,548	115.0	31.5	63.4
Parlor, chair, and special car.....	1,036,520	705,261	303,608	241.4	47.0	132.3
Freight.....	10,165,618	5,231,215	1,038,097	879.3	94.3	403.9
Mail.....	723,640	646,575	432,080	67.5	11.9	49.6
Baggage, express, and milk.....	3,687,947	1,560,802	401,672	818.1	136.3	238.6
Other transportation revenue.....	1,919,413	.....	.....	.....	.....	.....
Sale of electric current.....	36,500,030	20,093,302	7,703,574	373.8	81.7	160.8
Other nontransportation revenue.....	10,826,901	7,818,209	3,853,420	181.0	38.5	102.9
Income from other sources	18,418,813	11,556,396	2,950,628	524.2	59.4	291.7
<b>PER CENT OF GROSS INCOME.</b>						
Operating revenues.....	96.9	97.3	98.8	.....	.....	.....
Passenger.....	85.8	88.9	93.3	.....	.....	.....
Parlor, chair, and special car.....	0.2	0.2	0.1	.....	.....	.....
Freight, mail, baggage, and express.....	2.5	1.7	0.8	.....	.....	.....
Sale of electric current.....	6.2	4.7	3.1	.....	.....	.....
Other operating revenue.....	2.2	1.8	1.5	.....	.....	.....
Income from other sources	3.1	2.7	1.2	.....	.....	.....

A notable feature is the increase in income other than passenger, freight, mail, and express, and also in freight, mail, and express income as compared with passenger. Income other than that from passenger, parlor, chair, and special cars, and freight, mail, baggage, and express, formed 11.5 per cent of the gross income in 1912, as compared with 5.8 per cent in 1902, and income from freight, mail, baggage, and express 2.5 per cent in 1912, as compared with eight-tenths of 1 per cent in 1902.

Table 77 gives the gross income of the operating companies, by geographic divisions and states, for 1912, 1907, and 1902, the divisions and states being ranked according to income in 1912.

The rapid development of electric railways on the Pacific coast has advanced the Pacific division from sixth place in 1902 to fourth in 1912, while among the states California advanced from seventh place to sixth, Washington from seventeenth to thirteenth, and Oregon from twenty-eighth to seventeenth. The development in the West South Central division has also been large, the division having advanced from eighth place in 1907 and 1902 to seventh in 1912, chiefly because of growth in Texas, which advanced from twenty-fourth place in 1902 to sixteenth in 1912, and in Oklahoma, which, with no electric railways in 1902 and occupying thirty-seventh place in 1907, stood thirty-third in 1912. Other states which advanced in rank during the decade are Ohio, New Jersey, Michigan, Indiana, Virginia, West Virginia, Kansas, North Carolina, and Arkansas.

Table 77

DIVISION AND STATE.	GROSS INCOME OF OPERATING COMPANIES, BY GEOGRAPHIC DIVISIONS AND STATES.					
	1912	1907	1902	Rank.		
				1912	1907	1902
UNITED STATES.....	\$585,930,517	\$429,744,254	\$250,504,627	-----	-----	-----
GEOGRAPHIC DIVISIONS:						
Middle Atlantic.....	198,038,906	150,475,317	99,416,430	1	1	2
East North Central.....	139,260,473	101,418,112	55,887,241	2	2	3
New England.....	57,423,017	46,751,626	33,378,366	3	3	4
Pacific.....	56,293,175	33,576,347	13,553,639	4	5	6
West North Central.....	45,179,223	33,865,459	18,885,649	5	4	4
South Atlantic.....	41,368,967	29,604,986	15,164,235	6	6	5
West South Central.....	18,853,761	12,706,325	4,829,650	7	8	8
East South Central.....	17,562,259	13,646,689	6,556,640	8	7	7
Mountain.....	11,950,736	7,699,393	3,332,777	9	9	9
STATES:						
New York.....	123,523,376	91,685,673	60,881,780	1	1	1
Pennsylvania.....	50,194,047	45,706,986	30,357,727	2	2	2
Illinois.....	55,889,544	40,951,652	25,029,257	3	3	3
Ohio.....	40,706,038	31,274,901	16,599,851	4	4	5
Massachusetts.....	37,490,704	31,073,962	23,633,410	5	5	4
California.....	34,845,771	21,545,797	9,967,838	6	6	7
Missouri.....	21,240,533	18,032,732	10,734,692	7	7	6
New Jersey.....	18,321,483	13,082,658	8,176,923	8	8	9
Michigan.....	17,864,692	11,031,974	6,521,173	9	12	11
Delaware, Maryland, and District of Co- lumbia.....	17,318,667	12,890,776	8,393,872	10	9	8
Indiana.....	16,142,075	11,496,768	3,813,076	11	11	13
Connecticut and Rhode Island.....	14,457,064	11,838,033	7,320,035	12	10	10
Washington.....	13,590,933	8,402,560	2,542,906	13	13	17
Minnesota.....	9,685,158	7,056,508	3,727,648	14	14	14
Wisconsin.....	8,648,124	6,662,817	3,923,884	15	15	12
Texas.....	8,514,403	4,857,997	1,547,846	16	18	24
Oregon.....	7,856,471	3,627,990	1,042,895	17	24	28
Iowa.....	7,452,454	4,391,140	2,403,834	18	23	18
Georgia.....	7,421,747	4,720,595	2,375,229	19	20	19
Virginia.....	7,247,056	5,401,415	1,667,022	20	17	22
Louisiana.....	6,908,131	5,994,975	2,910,244	21	16	16
Colorado.....	6,630,480	4,483,254	2,227,766	22	21	20
Kentucky.....	6,155,248	4,791,933	2,933,800	23	19	15
Tennessee.....	6,151,953	4,480,991	1,866,835	24	22	21
Alabama.....	4,344,668	3,467,476	1,497,351	25	25	25
West Virginia.....	3,708,197	2,588,725	1,102,171	26	27	27
Nebraska.....	3,616,337	2,744,104	1,148,994	27	26	26
Maine.....	3,593,617	2,293,197	1,571,562	28	28	23
Kansas.....	2,944,154	1,478,846	370,481	29	29	34
North Carolina.....	2,348,715	1,295,477	442,487	30	32	32
Florida.....	1,969,315	1,371,541	529,743	31	30	31
Arkansas.....	1,891,949	1,275,396	371,560	32	33	33
Oklahoma.....	1,449,278	577,957	-----	33	37	-----
South Carolina.....	1,355,270	1,336,457	653,736	34	31	29
New Hampshire.....	1,250,391	1,092,182	604,131	35	34	30
Montana.....	1,065,597	902,621	492,023	36	36	35
Mississippi.....	910,390	906,289	258,654	37	35	36
Vermont.....	631,241	454,262	249,228	38	38	37
North and South Dakota.....	238,587	112,129	-----	39	39	-----
All other states.....	4,254,659	2,313,518	612,988	-----	-----	-----

The following table gives the per cent distribution of the number of companies and of the gross income, by geographic divisions, at the three censuses, the divisions being ranked according to gross income in 1912:

Table 78

DIVISION.	PER CENT OF TOTAL.					
	Number of companies.			Gross income.		
	1912	1907	1902	1912	1907	1902
United States.....	100.0	100.0	100.0	100.0	100.0	100.0
Middle Atlantic.....	25.2	26.3	27.4	33.8	35.0	39.7
East North Central.....	22.8	23.4	22.2	23.8	23.6	22.3
New England.....	9.3	12.6	17.1	9.8	10.9	13.3
Pacific.....	6.2	6.7	6.1	9.6	7.8	5.4
West North Central.....	8.7	7.8	7.3	7.7	7.9	7.3
South Atlantic.....	11.0	10.6	9.4	7.1	6.9	6.1
West South Central.....	8.1	5.3	4.0	3.2	3.0	1.9
East South Central.....	4.6	4.3	4.3	3.0	3.2	2.6
Mountain.....	4.1	3.0	2.3	2.0	1.8	1.3

It will be perceived that with respect to proportion of total gross income all of the Central, Southern, and Western divisions have advanced since 1902 at the expense of the Middle Atlantic and New England divisions.

*Condensed income account of operating companies.*—

The condensed income account of operating companies, by geographic divisions and states, is given in Table 158 (p. 302) for 1912, 1907, and 1902. Table 79 is a consolidation of the income accounts of the operating companies, of the companies reporting a net income, and of the companies reporting a net deficit for 1912, 1907, and 1902.

This table may be regarded as representing all operating companies consolidated as a single unit, and those reporting net income and those reporting net deficit, respectively, consolidated as units. The per cent of increase for all companies for the decade 1902-1912 was the same for gross income and for operating expenses, namely, 133.9 per cent, but the ratio of increase in operating revenues was 129.2 per cent, a little less than that for operating expenses. For the first half of the decade the ratio of increase was higher for operating expenses than for operating revenues, but for the last half the per cent of increase for operating revenues was higher than for operating expenses. The increase during the decade in deductions from income, 146.3 per cent, was greater than for gross income or operating revenues, chiefly because of the increase in taxes, 167.8 per cent, and the increase in interest, 157.4 per cent; consequently the ratio of increase for net income during the decade, 102.3 per cent, was considerably lower than for gross income or operating revenues. The disbursements in the form of dividends have increased actually and proportionately with each census. In 1902 dividends declared formed 51.9 per cent of the net income; in 1907, 65.6 per cent; and in 1912, 83.4 per cent; and as a result there has been a progressive decrease in the net surplus for all operating companies.

A decrease in the surplus account does not necessarily reflect an unfavorable financial condition, since it may be the result of changes in financial policy or bookkeeping practice rather than of changes in traffic conditions. Charges for sinking funds and depreciation accounts, other than depreciation entered as a regular operating expense, are reported under miscellaneous deductions from income, and these deductions increased from \$912,018, or 1.2 per cent of all deductions from income, in 1902, to \$6,575,774, or 4.8 per cent of all deductions from income, in 1907, and to \$13,285,584, or 7 per cent, in 1912.

Approximately one-third of the companies operated at a loss—that is, operating expenses and deductions from income or fixed charges exceeded gross income in the case of 34.7 per cent of the companies in 1912, 28.4

## STREET AND ELECTRIC RAILWAYS.

per cent in 1907, and 29.2 per cent in 1902. The gross income of the companies operating at a loss formed | but 11.1 per cent of the gross income of all companies in 1912, as compared with 13.1 per cent in 1902.

## STREET AND ELECTRIC RAILWAYS—CONDENSED INCOME ACCOUNT.

Table 79

Table 79	ACCOUNT.	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>		
					1902-1912	1907-1912	1902-1907
ALL OPERATING COMPANIES.							
Number of companies.....		975	939	799	22.0	3.8	17.5
Gross income.....	\$585,930,517	\$429,744,254	\$250,504,627	133.9	36.3	71.6	
Operating revenues.....	567,511,704	418,187,853	247,553,999	129.2	35.7	68.9	
Operating expenses.....	332,896,356	251,309,252	142,312,597	133.9	32.5	76.6	
Ratio of expenses to revenues (per cent).....	58.7	60.1	57.5				
Net operating revenue.....	\$234,615,348	\$166,878,606	\$105,241,402	122.9	40.6	58.6	
Miscellaneous income.....	18,418,813	11,556,396	2,950,628	524.2	59.4	291.7	
Gross income less operating expenses.....	253,034,161	178,435,002	108,192,030	133.9	41.8	64.9	
Deductions from income.....	191,123,408	138,094,716	77,595,053	146.3	38.4	78.0	
Taxes.....	35,027,965	19,755,602	13,078,899	167.8	77.3	51.1	
Interest.....	98,025,338	63,740,744	38,085,911	157.4	53.8	67.4	
Rent of leased lines and terminals.....	44,784,521	48,022,596	25,518,225	75.5	-6.7	88.2	
Miscellaneous deductions.....	13,285,584	6,575,774	912,018	1,356.7	102.1	621.0	
Net income.....	61,910,753	40,340,286	30,596,977	102.3	53.5	31.8	
Dividends.....	51,650,117	26,454,732	15,882,110	225.2	95.3	68.6	
Surplus.....	10,260,636	13,885,554	14,714,867	-30.3	-26.1	-6.3	
COMPANIES REPORTING NET INCOME.							
Number of companies.....	637	672	566	12.5	-5.2	18.7	
Gross income.....	\$520,898,845	\$334,366,519	\$217,753,909	139.2	55.8	53.6	
Operating revenues.....	505,201,891	324,630,690	216,370,744	133.5	55.6	50.0	
Operating expenses.....	288,468,430	190,734,840	121,264,907	137.9	51.2	57.3	
Ratio of expenses to revenues (per cent).....	57.1	58.7	56.0				
Net operating revenue.....	\$216,733,461	\$133,895,850	\$95,105,837	127.9	61.9	40.8	
Miscellaneous income.....	15,696,954	9,735,829	1,383,165	1,034.9	61.2	603.9	
Gross income less operating expenses.....	232,430,415	143,631,679	96,489,002	140.9	61.8	48.9	
Deductions from income.....	101,612,494	92,429,698	62,136,318	160.1	74.8	48.8	
Taxes.....	31,919,382	15,974,845	11,354,983	181.1	99.8	40.7	
Interest.....	79,385,657	49,161,890	30,917,983	156.8	61.5	59.0	
Rent of leased lines and terminals.....	38,870,160	21,315,583	19,157,541	102.9	82.3	11.3	
Miscellaneous deductions.....	11,434,295	5,977,380	705,811	1,520.0	91.3	746.9	
Net income.....	70,817,921	51,201,981	34,352,684	106.1	38.3	49.1	
Dividends.....	51,592,632	26,444,987	15,775,079	227.1	95.1	67.6	
Surplus.....	19,225,289	24,756,994	18,577,605	3.5	-22.4	33.3	
COMPANIES REPORTING NET DEFICIT.							
Number of companies.....	338	267	233	45.1	26.6	14.6	
Gross income.....	\$65,031,672	\$95,377,735	\$32,750,718	98.7	-31.8	191.2	
Operating revenues.....	62,309,813	93,557,168	31,183,255	99.8	-33.4	200.0	
Operating expenses.....	44,427,926	60,574,412	21,047,690	111.1	-26.7	187.8	
Ratio of expenses to revenues (per cent).....	71.3	64.7	67.5				
Net operating revenue.....	\$17,881,887	\$32,982,756	\$10,135,565	76.4	-45.8	225.4	
Miscellaneous income.....	2,721,859	1,820,567	1,567,463	73.6	49.5	16.1	
Gross income less operating expenses.....	20,608,746	34,803,323	11,703,028	76.1	-40.8	197.4	
Deductions from income.....	29,510,914	45,665,018	15,458,735	90.9	-35.4	195.4	
Taxes.....	3,108,583	3,780,757	1,723,916	80.3	-17.8	119.3	
Interest.....	18,636,681	14,578,854	7,167,928	160.0	27.8	103.4	
Rent of leased lines and terminals.....	5,914,361	26,707,013	6,360,684	-7.0	-77.9	319.9	
Miscellaneous deductions.....	1,851,289	598,394	206,207	797.8	209.4	190.2	
Net deficit.....	\$8,907,168	\$10,361,695	\$3,755,707	137.2	-18.0	189.2	
Dividends.....	57,485	9,745	107,031	-46.3	489.9	-90.9	
Total deficit.....	\$8,964,653	\$10,371,440	\$3,862,738	132.1	-17.5	181.4	
PER CENT OF TOTAL.							
Number of companies.....	100.0	100.0	100.0				
Companies reporting net income.....	65.3	71.6	70.8				
Companies reporting net deficit.....	34.7	28.4	29.2				
Gross income.....	100.0	100.0	100.0				
Companies reporting net income.....	88.9	77.8	86.9				
Companies reporting net deficit.....	11.1	22.2	13.1				
Operating expenses.....	100.0	100.0	100.0				
Companies reporting net income.....	86.7	75.9	85.2				
Companies reporting net deficit.....	13.3	24.1	14.8				
Deductions from income.....	100.0	100.0	100.0				
Companies reporting net income.....	84.6	66.9	80.1				
Companies reporting net deficit.....	15.4	33.1	19.9				

<sup>1</sup> A minus sign (—) denotes decrease.

Table 80 shows the per cent distribution of gross income according to the several objects for which the income was employed. It gives the distribution for all companies, for companies operating at a profit, and for those operating at a loss.

It will be seen that in the case of the companies operating at a loss approximately two-thirds of the gross income was absorbed by operating expenses, or an average of 68.3 per cent in 1912, as compared with an aver-

age of 55.4 per cent for the companies reporting a net income; and that interest charges, in the case of companies operating at a loss, consumed 28.7 per cent of the gross income, as compared with 15.2 for the companies reporting a profit. Similar conditions are shown for 1907 and 1902, except that in 1907 rentals paid for leased lines and terminals consumed a much larger share of the gross income, reaching 28 per cent in 1907.



**Table 80**

PER CENT DISTRIBUTION, BY ACCOUNTS, OF GROSS INCOME OF OPERATING COMPANIES (BASED ON TABLE 79).

ACCOUNT.	Total—All companies.			Companies reporting net income.			Companies reporting net deficit. <sup>1</sup>		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
Gross income.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Operating revenues.....	96.9	97.3	98.8	97.0	97.1	99.4	95.8	98.1	95.2
Miscellaneous income.....	3.1	2.7	1.2	3.0	2.9	0.6	4.2	1.9	4.8
Operating expenses.....	56.8	58.5	56.8	55.4	57.0	55.7	68.3	63.5	64.3
Deductions from income.....	32.6	32.1	31.0	31.0	27.6	28.5	45.4	47.9	47.2
Taxes.....	6.0	4.6	5.2	6.1	4.8	5.2	4.8	4.0	5.3
Interest.....	16.7	14.8	15.2	15.2	14.7	14.2	28.7	15.3	21.9
Rent of leased lines and terminals.....	7.6	11.2	10.2	7.5	6.4	8.8	9.1	28.0	19.4
Miscellaneous deductions.....	2.3	1.5	0.4	2.2	1.8	0.3	2.8	0.6	0.6
Net income or net deficit <sup>1</sup> .....	10.6	9.4	12.2	13.6	15.3	15.8	13.7	11.4	11.6
Dividends.....	8.8	6.2	6.3	9.9	7.9	7.2	0.1	( <sup>2</sup> )	0.3
Surplus or deficit <sup>1</sup> .....	1.8	3.2	5.9	3.7	7.4	8.5	13.8	11.4	11.8

<sup>1</sup> Italics indicate deficit.<sup>2</sup> Less than one-tenth of 1 per cent.

Table 81 gives comparative statistics for companies showing a net deficit for 1912, 1907, and 1902, by geographic divisions.

**Table 81**

CONDENSED INCOME ACCOUNT OF OPERATING COMPANIES REPORTING NET DEFICIT, BY GEOGRAPHIC DIVISIONS: 1912, 1907, AND 1902.

DIVISION.	Census.	Number of companies.	Gross income.	Operating expenses.	Deductions from income.	Net deficit.
United States.....	1912	338	\$65,031,672	\$44,427,926	\$29,510,914	\$8,907,168
	1907	267	95,377,735	60,574,412	45,665,018	10,891,695
	1902	233	32,750,718	21,047,690	15,458,735	3,756,707
North Atlantic (New England and Middle Atlantic).....	1912	129	33,987,536	23,053,531	16,415,848	6,481,843
	1907	120	69,736,683	42,063,080	34,004,750	6,831,147
	1902	140	12,107,564	8,709,588	5,373,376	1,976,400
North Central.....	1912	84	19,532,630	12,657,729	8,419,496	1,544,695
	1907	75	14,358,999	10,055,401	6,555,632	2,252,034
	1902	44	18,790,867	10,820,471	9,395,631	1,426,235
South Atlantic.....	1912	34	1,796,707	1,527,732	578,372	309,397
	1907	26	1,122,509	961,428	383,222	222,141
	1902	22	1,092,183	859,977	464,662	232,456
South Central.....	1912	43	1,792,572	1,549,959	609,119	366,606
	1907	18	1,657,142	1,309,957	596,836	249,651
	1902	14	465,130	387,844	135,094	55,808
Western (Mountain and Pacific).....	1912	48	7,922,227	5,038,975	3,488,079	1,804,827
	1907	28	8,502,402	6,184,546	4,124,578	1,806,722
	1902	13	294,974	269,810	91,972	66,308

The bulk of the deficit comes from companies in the New England and Middle Atlantic divisions, combined as the North Atlantic for comparative purposes. In 1912 these divisions furnished 61.5 per cent of the total deficit, as compared with 58.3 per cent in 1907 and 52.6 per cent in 1902.

Table 82 gives the condensed income account for all operating companies, for companies reporting "net income," and for companies reporting "net deficit," by geographic divisions, for 1912.

For the country as a whole, 637 companies, or 65.3 per cent of the total number, show net profits to the amount of \$70,817,921, and 338 companies, or 34.7 per cent of the total number, show net deficits to the amount of \$8,907,168, making a net profit balance of \$61,910,753 for all companies. In the Middle Atlantic division 41.1 per cent of the companies, with 15.6 per

cent of the gross income, reported net deficits aggregating \$5,191,923, and in the Mountain division more than half of the companies (52.5 per cent), with 14.1 per cent of the gross income, reported net deficits. On the other hand, in the West North Central division but 25.9 per cent of the companies, with 2.1 per cent of the gross income, reported net deficits.

**Table 82**

CONDENSED INCOME ACCOUNT OF ALL OPERATING COMPANIES, OF COMPANIES REPORTING NET INCOME, AND OF COMPANIES REPORTING NET DEFICIT: 1912.

DIVISION AND CLASS.	Number of companies.	Gross income.	Operating expenses.	Deductions from income.	Net income or net deficit.
ALL COMPANIES.					
United States.....	975	\$585,930,517	\$332,896,356	\$191,123,408	\$61,910,753
New England.....	91	57,423,017	37,316,197	14,062,569	6,044,251
Middle Atlantic.....	246	198,038,906	108,656,704	75,286,805	14,095,397
East North Central.....	222	139,260,473	78,747,118	45,893,986	14,619,369
West North Central.....	35	45,179,223	27,363,397	11,225,491	6,590,335
South Atlantic.....	107	41,363,967	21,691,731	13,277,195	6,500,041
East South Central.....	45	17,562,259	9,867,378	4,727,566	2,967,315
West South Central.....	79	18,853,761	10,390,837	5,139,540	3,323,384
Mountain.....	40	11,950,736	6,426,225	3,729,066	1,795,445
Pacific.....	60	56,293,175	32,636,769	17,781,190	5,975,216
COMPANIES REPORTING NET INCOME.					
United States.....	637	520,898,845	288,468,430	161,612,494	70,817,921
New England.....	63	54,297,594	34,842,387	13,121,036	6,334,171
Middle Atlantic.....	145	167,176,793	88,076,983	59,812,490	19,287,320
East North Central.....	160	120,662,129	66,814,733	37,775,198	16,072,198
West North Central.....	63	44,244,937	26,638,053	10,924,783	6,682,101
South Atlantic.....	73	39,572,260	20,063,999	12,698,823	6,809,438
East South Central.....	28	16,617,579	9,144,231	4,373,480	3,099,868
West South Central.....	53	18,005,869	9,664,025	4,884,507	3,557,337
Mountain.....	19	10,269,050	5,014,622	3,106,129	2,148,299
Pacific.....	33	50,052,634	28,309,397	14,916,048	6,827,189
COMPANIES REPORTING NET DEFICIT.					
United States.....	338	65,031,672	44,427,926	29,510,914	\$8,907,168
New England.....	28	3,125,423	2,473,810	941,533	289,920
Middle Atlantic.....	101	30,862,113	20,579,721	15,474,315	5,191,923
East North Central.....	62	18,598,344	11,932,385	8,118,788	1,452,829
West North Central.....	22	934,286	725,344	300,708	91,766
South Atlantic.....	34	1,796,707	1,527,732	578,372	309,397
East South Central.....	17	944,680	723,147	354,086	132,553
West South Central.....	26	847,892	826,812	255,033	233,953
Mountain.....	21	1,681,686	1,411,603	622,937	352,854
Pacific.....	27	6,240,541	4,227,372	2,865,142	351,973

*Condensed income account of nonoperating lessor companies.*—There were 285 nonoperating lessor companies in 1912, as compared with 291 in 1907 and 170 in 1902, but 12 of these companies in 1902 did not furnish financial reports. While all but a small portion of the income of these companies was paid as rental by other operating companies, its distribution is a matter of importance. Table 83 gives the income account of these companies for 1912, 1907, and 1902.

The nonoperating companies reported a gross income of \$35,605,367 in 1912, as compared with \$47,913,249 in 1907 and \$26,138,899 in 1902.

The decrease in the financial accounts for 1912, as compared with 1907, is due largely to changes in the status of a few roads. In 1907 the Metropolitan Street Railway Co., the Third Avenue Railway Co., the Second Avenue Railroad Co., and the Central Park, North and East River Railroad Co., of New York City, were nonoperating lessor companies, with an aggregate gross income of \$8,735,171, but in 1912 they were operating companies, the first constitut-

ing a part of the New York Street Railways. In Chicago 6 lessor companies in 1907, with incomes aggregating \$1,767,445, were constituent elements of the Chicago Railways Co., an operating company, in 1912. These changes alone involve an amount equal to 85 per cent of the shrinkage in lessor company revenues. In some cases the operating company is charged with the payment of the taxes for the lessor company, as well as interest on its bonds and other rental considerations, and the taxes are included along with the taxes of the operating company, instead of being entered as a part of the rental and charged against the income of the lessor company as an expense of that company. Variance in methods of handling these accounts in the reports for different censuses probably accounts for a portion of the difference. In Pennsylvania there was a shrinkage in income of lessor companies from \$13,937,422 in 1907 to \$9,650,103 in 1912. There were 138 lessor companies in Pennsylvania in 1912, and the shrinkage is distributed among a large number of those companies.

**Table 83**

	CONDENSED INCOME ACCOUNT OF NONOPERATING LESSOR COMPANIES.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
<b>NUMBER OF COMPANIES.</b>						
United States.....	285	291	* 158	80.4	-2.1	84.2
<b>Geographic divisions:</b>						
New England.....	28	27	29	-3.4		
Middle Atlantic.....	190	203	* 113	68.1		
East North Central.....	31	43	12	158.3		
West North Central.....	5	4	1	400.0		
South Atlantic.....	16	10	2	700.0		
East South Central.....	1					
West South Central.....	4	1				
Mountain.....	2	1	1	100.0		
Pacific.....	8	2				
<b>INCOME ACCOUNT.</b>						
Gross income.....	\$35,605,367	\$47,913,249	\$26,138,899	36.2	-25.7	83.3
Rentals from operating companies.....	35,144,521	47,500,933	26,116,884	34.6	-26.0	81.9
Miscellaneous income.....	460,846	412,316	22,015		11.8	
Deductions from income.....	16,090,372	19,465,984	8,779,294	83.2	-17.3	121.7
Interest.....	15,294,132	18,080,522	8,376,559	81.9	-15.5	115.2
Taxes and miscellaneous (maintenance of organization, etc.).....	856,240	1,435,462	402,735	112.6	-40.4	256.4
Net income.....	19,514,995	28,447,265	17,359,605	12.4	-31.4	63.9
Dividends.....	19,342,101	28,080,542	17,157,061	12.7	-31.0	63.4
Surplus.....	172,894	416,723	202,544	-14.6	-58.5	105.7
<b>PER CENT OF GROSS INCOME.</b>						
Rentals from operating companies.....	98.7	99.1	99.9			
Miscellaneous income.....	1.3	0.9	0.1			
Deductions from income.....	45.2	40.6	33.6			
Interest.....	42.8	37.6	32.1			
Taxes and miscellaneous.....	2.4	3.0	1.5			
Net income.....	54.8	59.4	66.4			
Dividends.....	54.3	58.5	65.6			
Surplus.....	0.5	0.9	0.8			

<sup>1</sup> A minus sign (-) denotes decrease.

\* Exclusive of 12 companies which failed to furnish financial information.

The deductions from income for the lessor companies were relatively much greater in 1912 than in 1907, and in 1907 than in 1902. The increase is chiefly found in the disbursements for interest, which formed 42.8 per cent of the gross income in 1912, as compared

with 32.1 per cent in 1902. Conversely, the proportion of gross income remaining as net income decreased from 66.4 per cent in 1902 to 54.8 per cent in 1912, and the disbursements in dividends from 65.6 per cent to 54.3 per cent. Of course, there is no necessity for the lessor companies to retain any considerable amounts as surplus.

The income account in detail for the nonoperating lessor companies, by states, for 1912, 1907, and 1902, is given in Table 159 (p. 305).

*Condensed income account of operating and lessor companies combined.*—A combination of the income accounts of the operating and lessor companies is given in Table 84 to show the aggregates for all street and electric railways of the United States, the duplications due to rentals paid by the operating companies to the lessor companies being eliminated.

**Table 84**

CONDENSED INCOME ACCOUNT OF OPERATING AND LESSOR COMPANIES COMBINED.

ACCOUNT.	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies.....	13	1,260	1,230	957	31.7	2.4
Gross income.....	\$586,391,363	\$430,156,570	\$250,526,642	134.1	36.3	71.7
Operating revenues.....	567,511,704	418,187,858	247,553,999	129.2	35.7	68.9
Operating expenses.....	332,896,356	251,309,252	142,312,597	133.9	32.5	70.6
Net operating revenue.....	234,615,348	166,878,606	105,241,402	122.9	40.6	58.6
Miscellaneous income.....	18,879,659	11,968,712	2,972,643	535.1	57.8	302.6
Gross income less operating expenses.....	253,495,007	178,847,318	108,214,045	134.8	41.7	65.3
Deductions from income.....	172,069,259	110,059,767	60,856,122	182.7	56.3	80.8
Interest.....	113,259,470	81,771,266	46,462,470	143.8	38.5	77.0
Miscellaneous, including taxes.....	* 58,809,789	* 28,288,501	14,393,652	308.6	107.9	96.5
Net income.....	* 81,425,748	68,787,551	47,357,923	71.9	18.4	45.3
Dividends.....	170,992,218	54,485,274	33,030,171	114.9	30.3	64.9
Surplus.....	10,433,530	14,302,277	14,318,752	-27.1	-27.1	-0.1
<b>PER CENT OF GROSS INCOME.</b>						
Operating revenues.....	96.8	97.2	98.8			
Miscellaneous income.....	3.2	2.8	1.2			
Operating expenses.....	58.3	58.4	56.8			
Deductions from income.....	27.8	25.6	24.3			
Interest.....	17.5	19.0	18.6			
Miscellaneous, including taxes.....	10.3	6.6	5.7			
Net income.....	13.9	16.0	18.9			
Dividends.....	12.1	12.7	13.2			
Surplus.....	1.8	3.3	5.7			

<sup>1</sup> A minus sign (-) denotes decrease.

\* Includes rentals paid to other operating companies, steam railroads, municipalities for subways, etc.

The rentals reported by the lessor companies as received do not, in all cases, agree with the amounts reported as paid for rental by the operating companies, the discrepancy being due primarily to differences in methods of accounting. In some cases not all of the rental reported by the lessee company was paid, but the full amount of the obligation was reported by the lessee company and the cash payments by the lessor company. In other cases the reports of the related operating and lessor companies did not cover the same period of time. To make the figures comparable the rentals received by the lessor companies are deducted from the income side of the account and a like amount from the fixed charges. The excess of rentals paid by the operating companies over rentals

received by the lessor companies represents rentals paid to companies other than the lessor street and electric railway companies and includes rentals paid other operating companies, rentals paid to municipalities for subways, as in New York and Boston, rentals for track leased from steam railroads, etc. The amount paid by operating companies for track leased from other operating companies is a duplication that can not be eliminated, but this amount is not relatively large. In 1912 the trackage leased by operating companies from other operating companies constituted but 1.3 per cent of the total trackage leased from electric railway companies.

The proportion of the gross income disbursed in dividends was necessarily higher for all companies combined than for operating companies alone, on account of the elimination of the duplications due to rentals and to the disbursement by the lessor companies of more than half of their income in the form of dividends.

The income account for operating and lessor companies combined is presented, by states, in Table 160 (p. 306) for all states for which the statistics of lessor companies are given in Table 159.

*Condensed income account of operating companies, classified according to income from railway operations.*—There is considerable variation in the relative importance of the various items of the income account for companies of different sizes. Table 85 is a comparative summary of the income account of operating companies, grouped according to income from railway operations, for 1912, 1907, and 1902; and Table 86 presents percentages based upon the data given in Table 85. Table 86 shows for each item the percentage each class forms of the total for the United States for each year, and the percentage of the gross income represented by each item for the several classes of companies.

A study of the statistics shows a progressive movement of the companies from the lower to the higher class groups. The proportion of the total number formed by companies of class C decreased from 84.4 per cent in 1902 to 74.8 per cent in 1912, while classes B and A both showed an increase in their respective proportions. With respect to income account, class B maintained about the same relation to the total at each census, there being but little change in the percentages of totals represented by gross income, operating revenues and expenses, deductions from income, and net income. The decreases in percentages of totals for class C are accounted for chiefly by the increases for class A.

Table 85

CONDENSED INCOME ACCOUNT OF OPERATING COMPANIES, CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: CLASS A, \$1,000,000 AND OVER; CLASS B, \$250,000 BUT LESS THAN \$1,000,000; CLASS C, LESS THAN \$250,000.

ACCOUNT AND CLASS.	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies....	975	939	799	22.0	3.8	17.5
Class A.....	91	76	44	106.8	19.7	72.7
Class B.....	155	130	81	91.4	19.2	60.5
Class C.....	729	733	674	8.2	-0.5	8.8
Gross income.....	\$585,930,517	\$429,744,254	\$250,504,627	133.9	36.3	71.6
Class A.....	436,410,065	303,071,003	170,328,500	156.2	44.0	77.9
Class B.....	89,008,583	69,462,248	39,857,063	123.3	28.1	74.3
Class C.....	60,511,869	57,211,003	40,319,064	50.1	5.8	41.9
Operating revenues.....	567,511,704	418,187,858	247,553,999	129.2	35.7	68.9
Class A.....	422,793,977	297,062,346	167,743,251	152.0	42.3	77.1
Class B.....	86,264,601	66,807,839	39,743,376	117.1	29.1	68.1
Class C.....	58,453,126	54,317,673	40,067,372	45.9	7.6	35.6
Operating expenses.....	332,896,356	251,309,252	142,312,597	133.9	32.5	76.6
Class A.....	239,739,927	173,358,511	91,842,001	161.0	38.3	88.8
Class B.....	53,250,043	41,344,061	23,354,624	128.0	28.8	76.6
Class C.....	39,906,386	36,606,680	27,115,972	47.2	9.0	35.0
Net operating revenue.....	234,615,348	166,878,606	105,241,402	122.9	40.6	58.6
Class A.....	183,054,050	123,703,835	75,901,250	104.1	48.0	63.0
Class B.....	33,014,558	25,463,778	16,388,752	101.4	29.7	55.4
Class C.....	18,546,740	17,710,993	12,951,400	43.2	4.7	36.8
Miscellaneous income.....	18,418,813	11,556,396	2,950,628	524.2	59.4	291.7
Class A.....	13,616,088	6,008,657	2,585,249	.....	.....	.....
Class B.....	2,743,982	2,654,409	113,687	.....	.....	.....
Class C.....	2,058,743	2,893,330	251,692	.....	.....	.....
Gross income less operating expenses.....	253,034,161	178,435,002	108,192,030	133.9	41.8	64.9
Class A.....	196,670,138	129,712,492	78,486,499	150.6	51.6	65.3
Class B.....	35,758,540	28,118,187	16,502,439	116.7	27.2	70.3
Class C.....	20,605,483	20,604,323	13,203,092	56.1	(2)	56.1
Deductions from income.....	191,123,408	138,094,716	77,595,053	145.3	38.4	78.0
Class A.....	148,640,699	102,004,702	56,819,948	161.6	45.7	79.5
Class B.....	25,425,531	20,911,111	10,936,393	132.5	21.6	91.2
Class C.....	17,057,178	15,178,903	9,835,712	72.3	12.4	54.3
Net income.....	61,910,753	40,340,286	30,596,977	102.3	53.5	31.8
Class A.....	48,029,439	27,707,790	21,689,551	121.7	73.3	27.9
Class B.....	10,333,009	7,207,076	5,596,046	85.0	43.4	29.5
Class C.....	3,548,305	5,425,420	3,304,380	5.5	-34.6	61.3
Dividends.....	51,650,117	26,454,732	15,882,110	225.2	95.2	66.6
Class A.....	40,034,088	20,819,820	12,174,836	228.8	92.2	71.0
Class B.....	8,309,512	3,921,313	2,342,179	254.8	111.9	67.4
Class C.....	3,306,517	1,713,599	1,365,595	142.1	93.0	25.5
Surplus.....	10,260,636	13,885,554	14,714,867	-30.3	-26.1	-5.6
Class A.....	7,995,851	6,887,970	9,432,215	-15.8	16.1	-27.4
Class B.....	2,023,497	3,255,763	3,223,807	-37.2	-38.4	1.9
Class C.....	241,788	3,711,821	1,998,785	-87.9	-93.5	85.7

<sup>1</sup> A minus sign (-) denotes decrease. <sup>2</sup> Less than one-tenth of 1 per cent.

Referring to Table 86: The economy in the operation of large companies as compared with small ones shows in the smaller per cent of gross income absorbed by operating expenses. It is true that deductions from income as a total absorb a larger proportion of the gross income for class A than for class B and a larger proportion for class B than for class C, but this is due chiefly to rentals paid nonoperating companies, essentially the entire amount of which is disbursed by the lessor companies as interest on funded debt or as dividends. Deductions from income are hereafter considered in detail (see p. 250).

**Table 86**CONDENSED INCOME ACCOUNT OF COMPANIES CLASSIFIED  
ACCORDING TO INCOME FROM RAILWAY OPERATIONS—  
PERCENTAGES (BASED ON TABLE 85).

ACCOUNT.	Class A—\$1,000,000 and over.			Class B—\$250,000 but less than \$1,000,000.			Class C—Less than \$250,000.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
<b>PER CENT OF TOTAL.</b>									
Number of companies..	9.3	8.1	5.5	15.9	13.8	10.1	74.8	78.1	84.4
Gross income.....	74.5	70.5	68.0	15.2	16.2	15.9	10.3	13.3	16.1
Operating revenues.....	74.5	71.0	67.8	15.2	16.0	16.1	10.3	13.0	16.2
Operating expenses.....	72.0	69.0	64.5	16.0	16.5	16.4	12.0	14.6	19.1
Net operating revenue.....	73.0	74.1	72.1	14.1	15.3	15.6	7.9	10.6	12.3
Miscellaneous income.....	73.9	52.0	37.6	14.9	23.0	3.9	11.2	25.0	8.5
Gross income less operat- ing expenses.....	77.7	72.7	72.5	14.1	15.8	15.3	8.1	11.5	12.2
Deductions from in- come.....	77.8	73.9	73.2	13.3	15.1	14.1	8.9	11.0	12.7
Net income.....	77.6	68.7	70.8	16.7	17.9	18.2	5.7	13.4	11.0
Dividends.....	77.5	78.7	76.6	16.1	14.8	14.7	6.4	6.5	8.6
Surplus.....	77.9	49.6	64.5	19.7	23.7	21.9	2.4	26.7	13.6
<b>PER CENT OF GROSS INCOME.</b>									
Operating revenues.....	96.9	98.0	98.5	96.9	96.2	99.7	96.6	94.9	99.4
Miscellaneous income.....	3.1	2.0	1.5	3.1	3.8	0.3	3.4	5.1	0.6
Operating expenses.....	54.9	57.2	53.9	59.8	59.5	58.6	65.9	64.0	67.3
Deductions from in- come.....	34.1	33.7	33.4	28.6	30.1	27.4	28.2	26.5	24.4
Net income.....	11.0	9.1	12.7	11.6	10.4	14.0	5.9	9.5	8.3
Dividends.....	9.2	6.9	7.1	9.3	5.7	5.9	5.5	3.0	3.3
Surplus.....	1.8	2.3	5.6	2.3	4.7	8.1	0.4	6.5	5.0

The operating ratio—that is, the percentage which operating expenses form of operating revenues—is a gauge or index to economy in operation. The following statement gives the operating ratios for the three classes:

CLASS.	OPERATING RATIO—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS.		
	1912	1907	1902
All companies.....	58.7	60.1	57.5
Class A—\$1,000,000 and over.....	56.7	58.4	54.8
Class B—\$250,000 but less than \$1,000,000.....	61.7	61.9	58.8
Class C—Less than \$250,000.....	68.3	67.4	67.7

The average operating ratios for classes A, B, and C, for the three years, based upon the aggregate operating revenue and the aggregate operating expenses for the three years, are: For class A, 56.9 per cent; class B, 61.2 per cent; and class C, 67.8 per cent.

*Condensed income account of operating companies without and with commercial lighting.*—The generation and sale of electricity by railway companies for purposes other than the operation of the railways necessarily have some effect upon the proportions that the different items of income and expense represent of the respective totals. Table 87 is a comparative summary, for 1912, 1907, and 1902, of the income accounts of operating companies that do not conduct light and power departments in connection with the railways, designated as companies "without commercial lighting," or "class X;" companies that generate and sell electricity for light, power, and other purposes, designated as companies "with commercial lighting," or "class Y;" and the group of miscellaneous companies,

chiefly those operated for a part of the year only and including most of the small horse railroads, designated as "miscellaneous," or "class Z." Class Y does not include railway companies with light and power departments which made separate reports, with segregation of capitalization and all financial data, for the railway and light and power departments.

**Table 87**CONDENSED INCOME ACCOUNT OF OPERATING COMPANIES  
WITHOUT AND WITH COMMERCIAL LIGHTING: CLASS X,  
WITHOUT COMMERCIAL LIGHTING; CLASS Y, WITH COM-  
MERCIAL LIGHTING; CLASS Z, MISCELLANEOUS.

ACCOUNT AND CLASS.	1912	1907	1902	Per cent of increase.		
				1902- 1912	1907- 1912	1902- 1907
Number of companies	975	* 939	* 799	22.0	3.8	17.5
Class X.....	760	709	630	20.7	7.2	12.5
Class Y.....	* 168	* 175	112	50.0	—4.0	56.3
Class Z.....	47	55	57			
Gross income.....	\$585,930,517	\$429,744,254	\$250,504,627	133.9	36.3	71.6
Class X.....	476,872,025	356,704,386	225,611,197	111.4	33.7	58.1
Class Y.....	108,004,359	71,768,709	22,418,065	381.8	50.5	220.1
Class Z.....	1,054,133	1,271,159	2,475,365			
Operating revenues.....	567,511,704	418,187,858	247,553,999	129.2	35.7	63.9
Class X.....	461,908,807	347,955,013	222,989,978	107.2	32.7	56.0
Class Y.....	104,575,497	68,986,416	22,083,656	373.4	51.6	212.3
Class Z.....	1,027,400	1,246,429	2,475,365			
Operating expenses.....	332,896,356	251,309,252	142,312,597	133.9	32.5	76.6
Class X.....	273,622,168	208,847,845	128,038,482	113.7	31.0	63.1
Class Y.....	58,520,068	41,566,582	12,834,941	355.9	40.8	223.9
Class Z.....	754,120	894,825	1,439,174			
Net operating revenue.....	234,615,348	166,878,006	105,241,402	122.9	40.6	58.6
Class X.....	188,286,639	139,107,168	94,951,496	98.3	35.4	46.5
Class Y.....	46,055,429	27,419,834	9,253,715	397.7	63.0	196.3
Class Z.....	273,280	351,604	1,036,191			
Miscellaneous income.....	18,418,813	11,556,396	2,950,628	524.2	59.4	291.7
Class X.....	14,963,218	8,749,373	2,621,219	470.8	71.0	233.8
Class Y.....	3,428,862	2,782,293	329,409	940.9	23.2	744.6
Class Z.....	26,733	24,730				
Gross income less operating expenses.....	253,034,161	178,435,002	108,192,030	133.9	41.8	64.9
Class X.....	203,249,857	147,856,541	97,572,715	108.3	37.5	51.5
Class Y.....	40,484,291	30,202,127	9,583,124	416.4	63.8	215.2
Class Z.....	300,013	376,334	1,036,191			
Deductions from in- come.....	191,123,408	138,094,716	77,595,053	146.3	38.4	73.0
Class X.....	157,930,180	117,688,115	71,027,194	122.4	34.2	65.7
Class Y.....	32,938,361	19,944,704	6,007,847	443.3	65.1	232.0
Class Z.....	254,867	461,897	560,012			
Taxes.....	35,027,965	19,755,602	13,078,899	167.8	77.3	51.0
Class X.....	29,507,142	16,755,648	12,294,585	140.0	76.1	36.3
Class Y.....	5,477,369	2,976,684	733,575	646.6	84.0	305.8
Class Z.....	43,454	23,270	50,739			
Interest.....	98,025,338	63,740,744	38,085,911	157.4	53.8	67.4
Class X.....	78,108,915	50,534,496	32,728,041	133.7	54.6	54.4
Class Y.....	19,708,006	12,782,361	4,849,800	306.3	54.2	133.6
Class Z.....	208,417	423,887	508,070			
Rent of leased lines and terminals.....	44,784,521	48,022,596	25,518,225	75.5	—6.7	88.2
Class X.....	39,246,647	45,328,842	25,470,229	54.1	—13.4	78.0
Class Y.....	5,535,054	2,693,754	47,413			
Class Z.....	2,820		583			
Miscellaneous.....	13,285,584	6,575,774	912,018			
Class X.....	11,067,476	5,069,129	534,339			
Class Y.....	2,217,932	1,491,905	377,059			
Class Z.....	176	14,740	620			
Net income.....	61,910,753	40,340,286	30,596,977	102.3	53.5	31.8
Class X.....	45,319,677	30,168,426	26,545,521	70.7	50.2	13.6
Class Y.....	16,545,930	10,257,423	3,575,277	362.8	61.3	136.9
Class Z.....	45,146	—85,563	476,179			
Dividends.....	51,650,117	26,454,732	15,882,110	225.2	95.2	66.6
Class X.....	39,439,692	22,476,056	15,022,519	162.5	75.5	49.6
Class Y.....	12,199,579	3,971,059	813,091			
Class Z.....	10,846	7,617	46,500			
Surplus.....	10,260,636	13,885,554	14,714,867	—30.3	—26.1	—5.6
Class X.....	5,879,985	7,692,370	11,523,002	—48.9	—23.6	—33.2
Class Y.....	4,346,351	6,286,364	2,762,186	57.4	—30.9	127.6
Class Z.....	34,300	—93,180	429,679			

1 A minus sign (—) denotes decrease.

2 Exclusive of 6 companies which failed to furnish this information.

3 Exclusive of 18 companies which failed to furnish this information.

4 Exclusive of 1 part-time company.

5 Exclusive of 2 part-time companies.

There were 44 railway companies with light and power departments that made separate reports for such departments in 1912, and these are included in the report on Central Electric Light and Power Stations. Table 88 gives percentages based upon Table 87. It shows the percentages which each item for classes X and Y forms of the total for the United States at each census, together with the percentage of gross income represented by each item for these classes. Percentages for class Z are omitted from these tables, as they are so small as to be of no statistical value.

Table 88

ACCOUNT.	CONDENSED INCOME ACCOUNT OF COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING—PER CENT OF TOTAL. <sup>1</sup>					
	Class X. Companies without commercial lighting.			Class Y. Companies with commercial lighting.		
	1912	1907	1902	1912	1907	1902
PER CENT OF TOTAL.						
Number of companies.....	77.9	75.5	78.8	17.2	18.6	14.0
Gross income.....	81.4	83.0	90.1	18.4	16.7	8.9
Operating revenues.....	81.4	83.2	90.1	18.4	16.5	8.9
Operating expenses.....	82.2	83.1	90.1	17.6	16.5	9.0
Net operating revenue.....	80.3	83.4	90.2	19.6	16.4	8.8
Miscellaneous income.....	81.2	75.7	88.8	18.6	24.1	11.2
Gross income less operating expenses.....	80.3	82.9	90.2	19.6	16.9	8.9
Deductions from income.....	82.6	85.2	91.5	17.2	14.4	7.7
Taxes.....	84.2	84.8	94.0	15.6	15.1	5.6
Interest.....	79.7	79.3	85.9	20.1	20.0	12.7
Rent of leased lines and terminals.....	87.6	94.4	99.8	12.4	5.6	0.2
Miscellaneous.....	83.3	77.1	58.6	16.7	22.7	41.3
Net income.....	73.2	74.8	86.8	26.7	25.4	11.7
Dividends.....	76.4	85.0	94.6	23.6	15.0	5.1
Surplus.....	57.3	55.4	78.3	42.4	45.3	18.8
PER CENT OF GROSS INCOME.						
Operating revenues.....	96.9	97.5	98.8	96.8	96.1	98.5
Miscellaneous income.....	3.1	2.5	1.2	3.2	3.9	1.5
Operating expenses.....	57.4	58.5	56.8	54.2	57.9	57.3
Deductions from income.....	33.1	33.0	31.5	30.5	27.8	26.8
Taxes.....	6.2	4.7	5.4	5.1	4.1	3.3
Interest.....	16.4	14.2	14.5	18.2	17.8	21.6
Rent of leased lines and terminals.....	8.2	12.7	11.3	5.1	3.8	0.2
Miscellaneous.....	2.3	1.4	0.2	2.1	2.1	1.7
Net income.....	9.5	8.5	11.8	15.3	14.3	15.9
Dividends.....	8.3	6.3	6.7	11.3	5.5	3.6
Surplus.....	1.2	2.2	5.1	4.0	8.8	12.3

<sup>1</sup> Class Z—Miscellaneous: 4.8 per cent of companies in 1912, 5.9 per cent in 1907, and 7.1 per cent in 1902; 1 per cent or less of income accounts.

Not all of the income from sale of electric current by railway companies is included under class Y. There were 381 companies in 1912 which reported income from the sale of current. Of these, 169 had light and power departments (168 in class Y, and 1, a part-time company, in class Z). The other 212 companies reported a total income of \$5,515,475 from the sale of current, chiefly current supplied to affiliated or connecting railways, or sold incidentally. As this amount was not so great as to affect perceptibly the operating railway accounts, these companies were included in class X. In 1907 there were 153 such companies, with \$3,516,747 income from the sale of current, included in class X.

Table 89 shows the number of companies selling electric current in 1912 and how reported, by geographic divisions.

Table 89

NUMBER OF ELECTRIC RAILWAY COMPANIES WITH INCOME FROM SALE OF ELECTRIC CURRENT: 1912.						
DIVISION. <sup>1</sup>	Companies with light and power departments.			Companies reporting sale of electric current.		
	Total.	Data for light and power departments included in report for Street and Electric Railways.	Separate reports for light and power departments included in report for Central Electric Light and Power Stations.	Total.	Companies doing commercial lighting.	Companies not doing commercial lighting.
United States....	213	169	44	381	169	212
New England.....	12	6	6	33	6	27
Middle Atlantic.....	20	12	8	78	12	66
East North Central.....	59	49	10	107	49	58
West North Central.....	26	22	4	39	22	17
South Atlantic.....	38	35	3	53	35	18
East South Central.....	21	14	7	19	14	5
West South Central.....	17	14	3	23	14	9
Mountain.....	9	7	2	11	7	4
Pacific.....	11	10	1	18	10	8

<sup>1</sup> See page 25 for states composing the several divisions.

Income from sale of electric current was a more important factor in 1912 than at the earlier censuses, and formed 6.4 per cent of the operating revenues in 1912, as compared with 4.8 per cent in 1907 and 3.1 per cent in 1902. The companies of class Y contributed 18.4 per cent of the operating revenues for all companies in 1912, as compared with 16.5 per cent in 1907 and 8.9 per cent in 1902. The percentages of increase for all items shown in Table 87 range, as a rule, much higher for this class of companies than they do for companies of class X. For the most part the railways engaged in commercial light and power business are located in the smaller cities or towns. The per cent of income absorbed by rentals of leased lines and terminals ranges much lower than for companies of class X, although considerably higher in 1912 than in 1907, and in 1907 than in 1902, and the proportions for total deductions from income are considerably lower for class Y than for class X, the former showing a much higher ratio for net income, namely, 15.3 per cent, as compared with 9.5 per cent for class X, in 1912, and 15.9 per cent, as compared with 11.8 per cent for class X, in 1902.

The operating ratios for these classes of companies, for 1912, 1907, and 1902, were as follows:

CLASS.	COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING—OPERATING RATIO (PER CENT).		
	1912	1907	1902
All companies.....	58.7	60.1	57.5
Class X—Without commercial lighting.....	59.2	60.0	57.4
Class Y—With commercial lighting.....	56.0	60.3	58.1
Class Z—Miscellaneous.....	78.4	71.8	58.1

Condensed income account of companies classified as "Elevated and subway" and "Surface."—The operating conditions of the elevated and subway railways and

the surface roads are so different as to give value to an analysis of the statistics for these groups. Table 90 is a comparative summary, for 1912 and 1907, of the income accounts of operating companies, classified as "Elevated and subway" and "Surface," and Tables 91 and 92 give percentages based upon Table 90, the former showing the percentage of the item total represented by each group and the latter the percentage of the gross income represented by each item.

**Table 90**

ACCOUNT AND CLASS.	CONDENSED INCOME ACCOUNT OF OPERATING COMPANIES, CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE."		
	1912	1907	Per cent of in- crease. <sup>1</sup>
Number of companies.....	975	930	3.8
Elevated and subway.....	7	6	16.7
Surface.....	968	924	3.8
Gross income.....	\$585,930,517	\$429,744,254	36.3
Elevated and subway.....	55,246,361	34,257,970	61.3
Surface.....	530,684,156	395,486,275	34.2
Operating revenues.....	567,511,704	418,187,858	35.7
Elevated and subway.....	52,238,727	33,874,054	54.2
Surface.....	515,272,977	384,313,804	34.1
Operating expenses.....	332,896,356	251,300,252	32.5
Elevated and subway.....	23,612,897	15,120,025	56.1
Surface.....	309,283,459	236,180,227	31.0
Net operating revenue.....	234,615,348	166,878,606	40.6
Elevated and subway.....	28,625,860	18,745,029	52.7
Surface.....	205,989,488	148,133,577	39.1
Miscellaneous income.....	18,418,813	11,556,396	59.4
Elevated and subway.....	3,007,634	383,925	683.4
Surface.....	15,411,179	11,172,471	37.0
Gross income less operating expenses.....	253,034,161	178,435,002	41.8
Elevated and subway.....	31,633,494	19,128,954	65.4
Surface.....	221,400,667	159,306,048	39.0
Deductions from income.....	191,123,408	138,094,718	38.4
Elevated and subway.....	22,732,065	13,459,216	68.9
Surface.....	168,391,343	124,635,500	35.1
Taxes.....	35,027,965	19,755,602	77.3
Elevated and subway.....	3,500,657	1,986,240	76.2
Surface.....	31,527,308	17,769,353	77.4
Interest.....	98,025,338	63,740,744	53.8
Elevated and subway.....	9,654,473	3,700,602	160.9
Surface.....	88,370,865	60,040,142	47.2
Rent of leased lines and terminals.....	44,784,521	48,022,506	-6.7
Elevated and subway.....	8,795,655	5,966,120	47.4
Surface.....	35,988,866	42,056,476	-14.4
Miscellaneous.....	13,285,584	6,575,774	102.0
Elevated and subway.....	781,280	1,806,245	-56.7
Surface.....	12,504,304	4,769,529	162.2
Net income.....	61,910,753	40,340,286	53.5
Elevated and subway.....	8,901,429	5,669,738	57.0
Surface.....	53,009,324	34,670,548	52.9
Dividends.....	51,650,117	26,454,732	95.2
Elevated and subway.....	8,529,636	4,008,880	112.8
Surface.....	43,120,481	22,445,852	92.1
Surplus.....	10,260,636	13,885,554	-26.1
Elevated and subway.....	371,793	1,660,858	-77.6
Surface.....	9,888,843	12,224,696	-19.1
Ratio of operating expenses to operating revenues (per cent):			
All companies.....	58.7	60.1	.....
Elevated and subway.....	45.2	44.7	.....
Surface.....	60.0	61.5	.....

<sup>1</sup> A minus sign (—) denotes decrease.

**Table 91**

ACCOUNT.	CONDENSED INCOME ACCOUNT OF COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE"—PER CENT OF TOTAL.			
	Elevated and subway.		Surface.	
	1912	1907	1912	1907
Number of companies.....	0.7	0.6	99.3	99.4
Gross income.....	9.4	8.0	90.6	92.0
Operating revenues.....	9.2	8.1	90.8	91.9
Operating expenses.....	7.1	6.0	92.9	94.0
Net operating revenue.....	12.2	11.2	87.8	88.8
Miscellaneous income.....	16.3	3.3	83.7	96.7
Gross income less operating expenses.....	12.5	10.7	87.5	89.3
Deductions from income.....	11.9	9.7	88.1	90.3
Taxes.....	10.0	10.1	90.0	89.9
Interest.....	9.8	5.8	90.2	94.2
Rent of leased lines and terminals.....	19.6	12.4	80.4	87.6
Miscellaneous.....	5.9	27.5	94.1	72.5
Net income.....	14.4	14.1	85.6	85.9
Dividends.....	16.5	15.2	83.5	84.8
Surplus.....	3.6	12.0	96.4	88.0

**Table 92**

ACCOUNT.	CONDENSED INCOME ACCOUNT OF COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE"—PER CENT OF GROSS INCOME.					
	Total—All com- panies.		Elevated and subway.		Surface.	
	1912	1907	1912	1907	1912	1907
Gross income.....	100.0	100.0	100.0	100.0	100.0	100.0
Operating revenues.....	96.9	97.3	94.6	98.9	97.1	97.2
Miscellaneous income.....	3.1	2.7	5.4	1.1	2.9	2.8
Operating expenses.....	56.8	58.5	42.7	44.2	58.3	59.7
Deductions from income.....	32.6	32.1	41.1	39.3	31.7	31.5
Taxes.....	6.0	4.6	6.3	5.8	5.9	4.5
Interest.....	16.7	14.8	17.5	10.8	16.7	15.2
Rent of leased lines and ter- minals.....	7.6	11.2	15.9	17.4	6.8	10.6
Miscellaneous.....	2.3	1.5	1.4	5.3	2.4	1.2
Net income.....	10.6	9.4	16.1	16.5	10.0	8.8
Dividends.....	8.8	6.2	15.4	11.7	8.1	5.7
Surplus.....	1.8	3.2	0.7	4.8	1.9	3.1

The elevated and subway group shows a low ratio of operating expenses to gross income and a reduction in the ratio from 1907 to 1912, namely, from 44.2 per cent in 1907 to 42.7 per cent in 1912. The proportion absorbed by deductions from income for the elevated and subway group is largely in excess of that for the surface roads, primarily by reason of the large proportion of income required for rentals.

#### OPERATING REVENUES AND MISCELLANEOUS INCOME.

*Operating revenues.*—Table 161 (p. 308) gives the operating revenues, by geographic divisions and states, for 1912, 1907, and 1902, and the sources from which derived. Operating revenues include the income from passenger, parlor, chair, and special cars, and from freight, mail, baggage, express, and milk; other transportation revenue; receipts from sale of electric current; and other nontransportation revenue. Passenger revenue includes cash-fare collections, receipts from sale of tickets, and the cash equivalent of mileage tickets honored for transportation. Parlor, chair, and special car revenue includes fares collected for seats in parlor, observation, chair, and other special passenger cars, and revenue from cars chartered for special passenger service. Freight revenue is what the name implies. Mail revenue includes amounts received for the transportation of mails and for the use of railway post-office cars and special facilities, and bonuses for special mail transportation. Baggage revenue includes amounts received for the transportation of baggage in excess of free allowances and for the transportation of packages, other articles, dogs, etc., as baggage. The term "express" covers matter handled at a higher rate than freight on account of quicker service or of collection and delivery, and express revenue includes amounts received for transportation or for facilities on cars and at stations incident to the transportation of express matter, not including the separate rent of offices at stations. On some lines the transportation of milk is an important feature. "Other transportation revenue" includes amounts received for switching service and for all transportation service not



otherwise provided for. Income from the sale of electric current, either to other public-service corporations or to the general public, is, next to passenger revenue, the largest item of operating income, and it constitutes the greater part of the nontransportation operating revenues. Included under "Other nontransportation revenue" are amounts received for station and car privileges, advertising at stations and on cars, parcel-room service, the storage of freight and baggage, car demurrage, telegraph and telephone service in cases where the expense can not be separated from the expense of conducting the railway service, rent of tracks and terminals, rent of cars, rent of electrical equipment of cars and other equipment, rent of buildings or other property used in connection with railway operations, such as depot and station grounds and buildings, offices and rooms rented at stations, etc., and receipts from parks and pleasure resorts. The standard form of accounting provides that only the net income or net expense of parks or amusement resorts operated primarily for the purpose of attracting traffic shall be carried in the railway accounts. In some cases it is possible that the total expense and the gross income were reported, which would not affect the data for net income, although tending to inflate the income and expense accounts.

The following statement illustrates the differences in the relative importance of the several sources of

revenue for street and electric railways and steam railroads in 1912 and 1907:

CLASS OF SERVICE.	PER CENT DISTRIBUTION OF OPERATING REVENUES, BY SOURCE, FOR STREET AND ELECTRIC RAILWAYS AND STEAM RAILROADS.			
	Street and electric railways.		Steam railroads.	
	1912	1907	1912	1907
Operating revenues.....	100.0	100.0	100.0	100.0
Passenger service.....	88.8	91.5	23.2	21.8
Freight service.....	1.8	1.3	69.3	70.4
Mail service.....	0.1	0.2	1.8	1.9
Express service.....	0.6	0.4	2.6	2.2
All other.....	8.7	6.7	3.2	3.6

The income from passenger service represents approximately nine-tenths of the operating revenues of the street and electric railways, while freight service yields about seven-tenths of the operating income of the steam roads; but for each the percentage is slightly lower for 1912 than for 1907.

Table 93, based on Table 161 (p. 308), gives the percentages of increase for the census periods 1902-1912, 1907-1912, and 1902-1907, by geographic divisions, for operating revenues and the component accounts, grouped as "Passenger service," which includes "Passenger" and "Parlor, chair, and special car;" "Freight, mail, baggage, and express" (including milk); "Sale of electric current;" and "All other revenue," including "Other transportation revenue" for 1912.

Table 93

DIVISION.	OPERATING REVENUES, BY SOURCE AND BY GEOGRAPHIC DIVISIONS—PER CENT OF INCREASE <sup>1</sup> (BASED ON TABLE 161).														
	Operating revenues.			Passenger service. <sup>2</sup>			Freight, mail, baggage, and express. <sup>3</sup>			Sale of electric current.			All other revenue.		
	1902-1912	1907-1912	1902-1907	1902-1912	1907-1912	1902-1907	1902-1912	1907-1912	1902-1907	1902-1912	1907-1912	1902-1907	1902-1912	1907-1912	1902-1907
United States.....	129.2	35.7	68.9	115.1	31.6	63.5	678.8	95.9	297.4	373.8	81.7	160.7	230.8	63.0	102.9
New England.....	69.9	21.8	39.5	66.4	21.7	36.8	376.5	105.2	132.2	87.9	-11.5	112.3	89.7	24.5	52.4
Middle Atlantic.....	96.0	30.0	50.8	90.5	28.5	48.2	393.7	53.6	221.6	440.5	67.6	222.5	199.8	62.3	84.7
East North Central.....	146.1	36.4	80.4	130.6	32.4	74.2	757.3	92.5	345.3	287.0	80.9	113.9	273.6	94.3	178.3
West North Central.....	144.9	33.4	83.6	133.7	29.4	80.7	966.1	176.9	285.1	287.4	70.1	127.9	355.5	115.6	125.2
South Atlantic.....	163.2	38.3	90.3	141.8	34.6	79.6	470.6	122.0	157.1	304.1	49.0	171.1	115.2	47.5	45.9
East South Central.....	160.6	27.5	104.5	137.9	23.6	92.4	455.5	72.1	223.4	330.8	60.2	186.8	436.0	-11.9	508.4
West South Central.....	252.6	52.8	130.8	217.6	49.7	112.1	1,138.0	165.2	366.8	1,685.0	68.8	957.6	419.7	137.1	119.3
Mountain.....	235.7	54.7	117.0	164.6	43.1	84.8	239.5	37.8	146.5	1,578.3	95.6	755.2	409.5	306.1	25.5
Pacific.....	302.0	74.0	131.1	250.7	53.9	127.9	1,957.4	122.7	823.9	615.1	340.7	62.3	679.4	266.9	112.4

<sup>1</sup>A minus sign (—) denotes decrease.

<sup>2</sup>Including "Parlor, chair, and special car."

<sup>3</sup>Including "Milk."

The proportionate increase in income from freight, mail, baggage, and express business greatly exceeds that from passenger service for each division and each five-year period, except in the case of the Mountain division for the period 1907-1912; and the same is true of income from sale of electric current, except in the case of the New England division for the period 1907-1912. The growth in freight, mail, baggage, and express business was specially large in the West Central divisions, both North and South, and on the Pacific coast.

Table 94, also based upon Table 161 (p. 308), gives the per cent distribution of each class of operating revenue, by geographic divisions, and the per cent

distribution of the operating revenues for each geographic division, according to source or class, for 1912 and 1907.

The Middle Atlantic division led in total operating revenue and passenger revenue for both 1912 and 1907 and in mail revenue for 1907, while the East North Central division led in revenue from parlor, chair, and special cars, from freight, and from baggage, express and milk business for both years, and in mail revenue and income from sale of electric current for 1912. The South Atlantic division reported the largest amount of income from sale of electric current in 1907. In every division, with the exception of the Middle Atlantic, the proportion of the operating revenue



derived from passengers is less in 1912 than in 1907, and, with the exception of the New England and Middle Atlantic divisions, the proportion represented by income from sale of electric current is greater. The

freight percentages, although small, show, as a rule, a proportionate increase. The only divisions where these percentages are less for 1912 than for 1907 are the East South Central and Mountain.

STREET AND ELECTRIC RAILWAYS—PER CENT DISTRIBUTION OF OPERATING REVENUES, BY GEOGRAPHIC DIVISIONS: 1912 AND 1907 (BASED ON TABLE 157).

Table 94	DIVISION.	Census.	Operating revenues, total.	Passenger.	Parlor, chair, and special car.	Freight.	Mail.	Baggage, express, and milk.	Other transportation revenue.	Sale of electric current.	Other nontransportation revenue.
	PER CENT OF TOTAL.										
	United States.....	1912 1907	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0
	New England.....	1912 1907	10.0 11.1	10.5 11.3	18.7 21.2	8.1 5.5	14.5 16.0	11.0 16.7	4.2	3.8 7.8	9.2 11.1
	Middle Atlantic.....	1912 1907	33.8 35.2	35.9 36.8	24.4 24.5	13.8 14.9	23.2 28.7	19.2 33.3	24.7	9.3 10.0	43.0 40.4
	East North Central.....	1912 1907	23.8 23.7	23.5 23.4	31.3 25.5	34.4 40.7	23.9 21.9	47.7 34.9	38.0	22.8 22.9	21.6 29.2
	West North Central.....	1912 1907	7.9 8.0	8.1 8.3	3.9 4.4	7.2 4.4	17.5 14.2	3.6 2.2	6.0	6.1 6.5	6.0 4.6
	South Atlantic.....	1912 1907	7.0 6.8	6.2 6.0	5.9 3.6	5.1 4.0	8.3 9.3	5.1 4.9	3.1	19.4 23.7	5.1 5.4
	East South Central.....	1912 1907	3.0 3.2	2.8 2.9	1.1 2.8	1.7 2.9	2.2 2.1	2.8 0.1	1.5	7.6 9.2	1.1 2.1
	West South Central.....	1912 1907	3.0 2.7	2.9 2.6	2.7 2.0	0.4 0.3	0.8 0.9	0.7 0.5	2.0	5.1 5.5	2.2 1.5
	Mountain.....	1912 1907	2.0 1.7	1.6 1.5	2.6 3.2	1.2 2.5	0.7 0.4	1.4 0.1	1.1	7.2 6.7	1.7 0.6
	Pacific.....	1912 1907	9.6 7.5	8.5 7.3	9.4 12.9	28.0 24.8	8.8 6.5	8.6 7.3	19.5	18.7 7.7	10.9 5.1
	PER CENT OF OPERATING REVENUES.										
	United States.....	1912 1907	100.0 100.0	88.6 91.4	0.2 0.2	1.8 1.3	0.1 0.1	0.6 0.4	0.3	6.4 4.8	1.9 1.9
	New England.....	1912 1907	100.0 100.0	92.9 93.0	0.3 0.3	1.5 0.6	0.2 0.2	0.7 0.6	0.1	2.5 3.4	1.8 1.9
	Middle Atlantic.....	1912 1907	100.0 100.0	94.2 95.4	0.1 0.1	0.7 0.6	0.1 0.2	0.4 0.4	0.2	1.8 1.4	2.4 1.9
	East North Central.....	1912 1907	100.0 100.0	87.3 90.0	0.2 0.2	2.6 2.2	0.1 0.1	1.3 0.5	0.5	6.2 4.6	1.7 2.3
	West North Central.....	1912 1907	100.0 100.0	91.0 93.9	0.1 0.1	1.6 0.7	0.3 0.3	0.3 0.1	0.3	5.0 3.9	1.5 1.1
	South Atlantic.....	1912 1907	100.0 100.0	78.4 80.6	0.2 0.1	1.3 0.7	0.2 0.2	0.5 0.3	0.1	18.0 16.7	1.4 1.5
	East South Central.....	1912 1907	100.0 100.0	81.2 83.6	0.1 0.1	1.0 1.1	0.1 0.1	0.6 (1)	0.2	16.2 13.7	0.7 1.3
	West South Central.....	1912 1907	100.0 100.0	86.9 88.7	0.2 0.1	0.3 0.1	(1) 0.1	0.1 0.1	0.2	10.9 9.9	1.4 1.0
	Mountain.....	1912 1907	100.0 100.0	72.6 78.4	0.2 0.3	1.1 1.8	(1) (1)	0.5 (1)	0.2	23.7 18.7	1.6 0.7
	Pacific.....	1912 1907	100.0 100.0	78.7 88.9	0.2 0.3	5.2 4.1	0.1 0.1	0.6 0.4	0.7	12.5 4.9	2.0 1.3

<sup>1</sup> Less than one-tenth of 1 per cent.

*Operating revenues of companies classified according to income from railway operations.*—The classification of railways according to size is based upon income from railway operations; hence income from the sale of current (which is an operating income), other nontransportation revenues, and items of income that make up the total of "Miscellaneous income" not from operations, do not affect the classification, however large

they may be. The development of interurban lines has brought in a large amount of freight and express business. The relative importance of the passenger service and other classes of service varies somewhat with the size and character of the companies and the locality served. Table 95 gives the comparative statistics for operating revenues, by source, for companies classified according to income from railway operations.

Table 95

OPERATING REVENUES, BY SOURCE, OF COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: CLASS A, \$1,000,000 AND OVER; CLASS B, \$250,000 BUT LESS THAN \$1,000,000; CLASS C, LESS THAN \$250,000.

ACCOUNT.	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies...	975	939	799	22.0	3.8	17.5
Class A.....	91	76	44	105.8	19.7	72.7
Class B.....	155	130	81	91.4	19.2	60.5
Class C.....	729	733	674	8.2	0.5	8.8
Operating revenues.....	\$567,511,704	\$418,187,858	\$247,553,999	129.2	35.7	68.9
Class A.....	422,793,977	297,062,346	167,743,251	152.0	42.3	77.1
Class B.....	86,204,601	66,807,839	39,743,376	117.1	29.1	68.1
Class C.....	58,513,126	54,317,673	40,067,372	45.9	7.6	35.6
Passenger.....	502,651,637	382,132,494	233,821,545	115.0	31.5	63.4
Class A.....	387,824,235	280,387,112	162,529,682	138.6	33.3	72.5
Class B.....	70,090,673	58,176,517	36,766,021	90.6	20.5	58.2
Class C.....	44,736,731	43,568,865	34,525,845	29.6	2.7	26.2
Parlor, chair, and special car <sup>2</sup> .....	1,036,520	705,261	303,608	241.4	47.0	132.3
Class A.....	698,801	437,082	172,269	305.6	59.9	153.7
Class B.....	216,875	155,292	64,030	238.2	39.5	142.5
Class C.....	121,144	112,887	67,309	80.0	7.3	67.7
Freight.....	10,165,616	5,231,215	1,038,097	879.3	94.3	403.9
Class A.....	4,909,404	1,571,763	164,712	2,880.6	212.4	854.2
Class B.....	2,935,011	1,953,313	271,062	982.0	49.8	622.5
Class C.....	2,325,201	1,701,139	602,323	285.7	36.6	182.4
Mail.....	723,640	646,575	432,080	67.5	11.9	49.6
Class A.....	504,280	448,462	287,407	75.5	12.4	56.0
Class B.....	106,163	81,931	60,019	76.9	29.6	36.5
Class C.....	113,217	116,182	84,654	33.7	-2.6	37.2
Baggage, express, and milk <sup>3</sup> .....	3,687,947	1,560,802	401,672	818.1	136.3	288.6
Class A.....	1,916,102	873,080	144,465	1,226.3	119.2	505.0
Class B.....	1,158,131	396,926	118,552	876.9	191.8	234.8
Class C.....	613,714	289,896	138,655	342.6	111.7	109.1
Other transportation revenue <sup>4</sup> .....	1,919,413	.....	.....	.....	.....	.....
Class A.....	1,228,410	.....	.....	.....	.....	.....
Class B.....	404,405	.....	.....	.....	.....	.....
Class C.....	286,598	.....	.....	.....	.....	.....
Sale of electric current.....	36,500,030	20,093,302	7,703,574	373.8	81.7	160.8
Class A.....	17,738,966	7,538,308	2,145,348	726.8	135.3	251.4
Class B.....	9,728,987	4,952,620	1,721,828	465.0	96.4	187.6
Class C.....	9,032,077	7,602,374	3,836,398	135.4	18.8	98.2
Other nontransportation operating revenue <sup>5</sup> .....	10,826,901	7,818,209	3,853,420	181.0	38.5	102.9
Class A.....	7,973,801	5,805,639	2,299,368	246.8	37.3	152.5
Class B.....	1,626,656	1,086,240	741,864	119.3	49.8	46.4
Class C.....	1,226,444	926,330	812,188	51.0	32.4	14.1

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Reported as "Chartered cars" in 1907 and 1902.

<sup>3</sup> Reported as "Express" in 1907 and 1902.

<sup>4</sup> Included in revenues from "Miscellaneous sources" in 1907 and 1902.

<sup>5</sup> Reported as revenues from "Miscellaneous sources" in 1907 and 1902.

The exclusion of income from sale of current, in classifying the companies according to size, obviously results in the assignment of some companies to classes lower than those to which they would have been assigned on the basis of gross income.

The average operating revenues per company for all companies of each class are as follows:

CLASS.	AVERAGE OPERATING REVENUES PER COMPANY.		
	1912	1907	1902
All companies.....	\$582,063	\$445,354	\$309,830
Class A.....	4,646,088	3,908,715	3,812,347
Class B.....	550,546	513,906	490,659
Class C.....	80,183	74,103	59,447

Table 96 gives the percentage data, derived from Table 95, for each class and for each year.

Table 96

PER CENT DISTRIBUTION OF OPERATING REVENUES, BY SOURCE, OF COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS (BASED ON TABLE 95).

ACCOUNT.	Class A. \$1,000,000 and over.			Class B. \$250,000 but less than \$1,000,000.			Class C. Less than \$250,000.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
PER CENT OF TOTAL.									
Number of companies.....	9.3	8.1	5.5	15.9	13.8	25.2	74.8	78.1	69.3
Operating revenues.....	74.5	71.0	67.8	15.2	16.0	16.1	10.3	13.0	16.2
Passenger.....	77.2	73.4	69.5	13.9	15.2	15.7	8.9	11.4	14.8
Parlor, chair, and special car	67.4	62.0	56.7	20.9	22.0	21.1	11.7	16.0	22.2
Freight.....	48.3	30.0	15.9	28.9	37.4	26.1	22.9	32.5	58.0
Mail.....	69.7	69.4	66.5	14.7	12.7	13.9	15.6	18.0	19.6
Baggage, express, and milk.	52.0	56.0	38.0	31.4	25.4	29.5	16.6	18.6	34.5
Other transportation revenue.....	64.0	.....	.....	24.1	.....	.....	19.9	.....	.....
Sale of electric current.....	48.6	37.5	27.8	26.7	24.6	22.3	24.7	37.8	49.8
Other nontransportation revenue.....	73.6	74.3	59.7	15.0	13.9	19.3	11.3	11.8	21.1
PER CENT OF OPERATING REVENUES.									
Operating revenue.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Passenger.....	91.7	94.4	96.9	81.2	87.1	92.5	76.5	80.2	86.2
Parlor, chair, and special car	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2
Freight.....	1.2	0.5	0.1	3.4	2.9	0.7	4.0	3.1	1.5
Mail.....	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2
Baggage, express, and milk.	0.5	0.3	0.1	1.3	0.6	0.3	1.1	0.5	0.3
Other transportation revenue.....	0.3	.....	.....	0.5	.....	.....	0.5	.....	.....
Sale of electric current.....	4.2	2.5	1.3	11.3	7.4	4.3	15.5	14.0	9.6
Other nontransportation revenue.....	1.9	2.0	1.4	1.9	1.6	1.9	2.1	1.7	2.0

The large companies, constituting class A, account for over three-fifths of the total receipts from passengers, from parlor, chair, and special cars, from mail service, and from miscellaneous nontransportation revenues, in 1912 and 1907; and the only specified classes of revenue for which these large companies did not report more than half of the respective totals were freight service and the sale of electric current.

Although passenger traffic is the chief source of revenue for all companies in class C, it constituted but 76.5 per cent of the operating revenues in 1912, as compared with 86.2 per cent in 1902. Passenger traffic furnished a considerably greater proportion for each of the other classes, but these percentages show a decrease for each class from census to census. The counterbalancing increases for all classes are found in receipts from freight, baggage, express, and milk, and from sale of electric current. Freight service and sale of current are relatively of more importance among companies of classes C and B than among those of class A.

*Operating revenues of companies without and with commercial lighting.*—The operating revenues of companies without commercial lighting and with commercial lighting, respectively, and of the group of miscellaneous companies are distributed among the specified sources in Table 97.

ACCOUNT AND CLASS.	OPERATING REVENUES, BY SOURCE, OF COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING; CLASS X, WITHOUT COMMERCIAL LIGHTING; CLASS Y, WITH COMMERCIAL LIGHTING; CLASS Z, MISCELLANEOUS.					
	191	1907	1902	Percent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies.....	975	939	799	22.0	3.8	17.5
Class X.....	760	709	630	20.6	7.2	12.5
Class Y.....	168	175	112	50.0	-4.0	56.3
Class Z.....	47	55	57	.....	.....	.....
Operating revenues.....	\$507,511,704	\$418,187,858	\$247,553,999	129.2	35.7	68.9
Class X.....	461,908,807	347,955,013	222,989,978	107.1	32.7	56.0
Class Y.....	104,575,497	68,986,416	22,088,656	373.4	51.6	212.3
Class Z.....	1,027,400	1,245,429	2,475,365	.....	.....	.....
Passenger.....	502,651,637	382,132,494	233,821,548	142.8	48.5	63.4
Class X.....	434,530,907	331,504,175	216,392,393	100.8	31.1	53.2
Class Y.....	67,301,669	49,500,161	15,084,584	346.2	36.0	228.2
Class Z.....	819,061	1,128,158	2,344,571	.....	.....	.....
Parlor, chair, and special car <sup>2</sup> .....	1,036,520	705,261	303,608	241.4	47.0	132.3
Class X.....	798,151	559,853	261,654	205.0	42.6	114.0
Class Y.....	237,990	144,662	38,949	511.0	64.5	271.4
Class Z.....	379	746	3,005	.....	.....	.....
Freight.....	10,165,616	5,231,215	1,038,097	879.3	94.3	403.9
Class X.....	7,547,669	4,077,049	834,233	804.7	85.1	388.7
Class Y.....	2,529,931	1,121,752	182,076	.....	.....	.....
Class Z.....	88,016	32,414	21,788	.....	.....	.....
Mail.....	723,640	646,575	432,080	67.5	11.9	49.6
Class X.....	631,994	577,721	409,376	54.4	9.4	41.1
Class Y.....	89,596	68,478	20,623	334.4	30.5	232.0
Class Z.....	2,050	376	2,081	.....	.....	.....
Baggage, express, and milk <sup>3</sup> .....	3,687,947	1,560,802	401,672	818.1	136.3	288.6
Class X.....	2,465,056	1,139,824	378,693	55.1	116.3	201.0
Class Y.....	1,214,906	413,975	17,560	.....	.....	.....
Class Z.....	7,985	7,003	5,419	.....	.....	.....
Other transportation revenue <sup>4</sup> .....	1,919,413	.....	.....	.....	.....	.....
Class X.....	1,516,984	.....	.....	.....	.....	.....
Class Y.....	400,314	.....	.....	.....	.....	.....
Class Z.....	2,115	.....	.....	.....	.....	.....
Sale of electric current.....	36,500,030	20,093,302	7,703,574	373.8	51.7	180.8
Class X.....	5,465,104	3,504,064	1,196,025	356.9	56.0	193.0
Class Y.....	30,948,468	16,530,807	6,445,542	380.2	87.2	156.5
Class Z.....	86,458	58,411	62,007	.....	.....	.....
Other nontransportation revenue <sup>5</sup> .....	10,826,901	7,818,209	3,853,420	180.1	38.5	102.9
Class X.....	8,932,942	6,592,307	3,517,604	154.5	35.8	87.4
Class Y.....	1,892,623	1,206,581	299,322	518.9	53.5	303.1
Class Z.....	21,336	19,321	36,494	.....	.....	.....

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Reported as "Chartered cars" in 1907 and 1902.

<sup>3</sup> Reported as "Express cars" in 1907 and 1902.

<sup>4</sup> Included in revenues from "Miscellaneous sources" in 1907 and 1902.

<sup>5</sup> Reported as revenue from "Miscellaneous sources" in 1907 and 1902.

Table 98 gives the percentage distribution of the items shown in Table 97.

As before explained, the income from the sale of electric current reported by companies without commercial lighting, though considerable in the aggregate, represents in the main sales of power to affiliated electric railway companies for traction purposes. Although the proportion it formed of the total income for companies of class X was slightly larger in 1912 than in former years, it constituted but 1.2 per cent of the total operating revenue for that class, as compared with 29.6 per cent for class Y.

It will be seen from Table 98 that while the sale of current by companies of class Y results in a virtual transposition of the proportions of revenues from sale of current and from passenger service, as compared with the corresponding proportions for companies of class X, it does not appreciably affect the proportions for the other services, either severally or as a whole.

ACCOUNT.	PER CENT DISTRIBUTION OF OPERATING REVENUES, BY SOURCE, OF COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING (BASED ON TABLE 97).								
	Class X. Companies without commercial lighting.			Class Y. Companies with commercial lighting.					
	1912	1907	1902	1912	1907	1902	1912	1907	1902
PER CENT OF TOTAL.									
Number of companies.....	77.9	75.5	78.8	17.2	18.6	14.0	.....	.....	.....
Operating revenues.....	81.4	83.2	90.1	18.4	16.5	8.9	.....	.....	.....
Passenger.....	76.5	80.8	92.6	11.9	13.0	6.5	.....	.....	.....
Parlor, chair, and special car.....	77.0	79.4	86.2	23.0	20.5	12.8	.....	.....	.....
Freight.....	74.2	78.0	80.4	24.9	21.4	17.5	.....	.....	.....
Mail.....	87.3	89.4	94.7	12.4	10.6	4.8	.....	.....	.....
Baggage, express, and milk.....	66.8	73.0	94.3	32.9	26.5	4.4	.....	.....	.....
Other transportation revenue.....	79.0	.....	.....	20.9	.....	.....	.....	.....	.....
Sale of electric current.....	15.0	17.4	15.5	84.8	82.3	83.7	.....	.....	.....
Other nontransportation revenue.....	82.7	84.3	91.3	17.1	15.4	7.8	.....	.....	.....
PER CENT OF OPERATING REVENUES.									
Operating revenues.....	100.0	100.0	100.0	100.0	100.0	100.0	.....	.....	.....
Passenger.....	94.1	95.3	97.0	64.4	71.8	63.3	.....	.....	.....
Parlor, chair, and special car.....	0.2	0.2	0.1	0.2	0.2	0.2	.....	.....	.....
Freight.....	1.6	1.2	0.4	2.4	1.6	0.8	.....	.....	.....
Mail.....	0.1	0.2	0.2	0.1	0.1	0.1	.....	.....	.....
Baggage, express, and milk.....	0.5	0.3	0.2	1.2	0.6	0.1	.....	.....	.....
Other transportation revenue.....	0.3	.....	.....	0.4	.....	.....	.....	.....	.....
Sale of electric current.....	1.2	1.0	0.5	29.6	24.0	29.2	.....	.....	.....
Other nontransportation revenue.....	1.9	1.9	1.6	1.8	1.7	1.3	.....	.....	.....

<sup>1</sup> Less than one-tenth of 1 per cent.

Operating revenues of companies classified as "Elevated and subway" and "Surface."—Tables 99 and 100 present similar statistics for the groups of "Elevated and subway" and "Surface" companies, the former giving the operating revenues, by source, for the two classes of companies for 1912 and 1907, with per cent of increase for the 5-year period, and the latter the per cent distribution of the items contained in the former.

ACCOUNT AND CLASS.	OPERATING REVENUES OF COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE."		
	1912	1907	Per cent of increase. <sup>1</sup>
Number of companies.....	975	939	3.8
Elevated and subway.....	7	6	16.7
Surface.....	968	933	3.8
Operating revenues.....	\$507,511,704	\$418,187,858	35.7
Elevated and subway.....	52,238,727	33,874,054	54.2
Surface.....	515,272,977	384,313,804	34.1
Passenger.....	502,651,637	382,132,494	31.5
Elevated and subway.....	50,327,764	31,601,516	59.3
Surface.....	452,323,873	350,530,978	29.0
Parlor, chair, and special car <sup>2</sup> .....	1,036,520	705,261	47.0
Elevated and subway.....	1,074	.....	.....
Surface.....	1,035,446	705,261	46.8
Freight.....	10,165,616	5,231,215	94.3
Elevated and subway.....	29,003	.....	.....
Surface.....	10,136,613	5,231,215	93.8
Mail.....	723,640	646,575	11.9
Elevated and subway.....	608	17,948	-96.6
Surface.....	723,032	628,627	15.0
Baggage, express, and milk <sup>3</sup> .....	3,687,947	1,560,802	136.3
Elevated and subway.....	12,558	31,721	-60.4
Surface.....	3,675,389	1,529,081	140.4
Other transportation revenue <sup>4</sup> .....	1,919,413	.....	.....
Elevated and subway.....	223,612	.....	.....
Surface.....	1,695,801	.....	.....
Sale of electric current.....	36,500,030	20,093,302	81.7
Elevated and subway.....	387,273	107,775	259.3
Surface.....	36,112,757	19,985,527	80.7
Other nontransportation revenue <sup>5</sup> .....	10,826,901	7,818,209	38.5
Elevated and subway.....	1,256,835	2,115,094	.....
Surface.....	9,570,066	5,703,115	.....

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Reported as "Chartered cars" in 1907.

<sup>3</sup> Reported as "Express cars" in 1907.

<sup>4</sup> Included in revenues from "Miscellaneous sources" in 1907.

<sup>5</sup> Reported as revenue from "Miscellaneous sources" in 1907.

Table 100

ACCOUNT.	PER CENT DISTRIBUTION OF OPERATING REVENUES OF COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE" (BASED ON TABLE 99).							
	Per cent of total.				Per cent of operating revenues.			
	Elevated and subway.		Surface.		Elevated and subway.		Surface.	
	1912	1907	1912	1907	1912	1907	1912	1907
Number of companies.....	0.7	0.6	99.3	99.4	100.0	100.0	100.0	100.0
Operating revenues.....	9.2	8.1	90.8	92.9	96.3	93.3	87.8	91.2
Passenger.....	10.0	8.3	90.0	91.7	( <sup>1</sup> )	( <sup>1</sup> )	0.2	0.2
Parlor, chair, and special car.....	0.1	.....	99.9	100.0	0.1	.....	2.0	1.4
Freight.....	0.3	.....	99.7	100.0	( <sup>1</sup> )	0.1	0.1	0.2
Mail.....	0.1	2.8	99.9	97.2	( <sup>1</sup> )	0.1	0.1	0.2
Baggage, express, and milk.....	0.3	2.0	99.7	98.0	( <sup>1</sup> )	0.1	0.7	0.4
Other transportation revenue.....	11.7	.....	88.3	.....	0.4	.....	0.3	.....
Sale of electric current.....	1.1	0.5	98.9	99.5	0.7	0.3	7.0	5.2
Other nontransportation revenue.....	11.6	27.1	88.4	72.9	2.4	6.2	1.9	1.5

<sup>1</sup> Less than one-tenth of 1 per cent.

As the elevated and subway group is typical rather than comprehensive, the principal interest of the statistics lies in the per cent distribution of the revenues rather than in the absolute amounts. Aside from miscellaneous earnings from advertising, rents, etc., the passenger receipts are practically the only source of revenue of the elevated and subway lines.

*Miscellaneous income.*—The term "miscellaneous income" is used to designate all income from other than operating sources. In 1912 the miscellaneous income of operating companies amounted to \$18,418,813, as compared with \$11,556,396 in 1907, an increase of 59.4 per cent. It constituted 3.1 per cent of the gross income in 1912, as compared with 2.7 per cent in 1907. Table 101 gives the statistics relating to miscellaneous income for 1912 and 1907, by geographic divisions.

Table 101

DIVISION.	Census.	MISCELLANEOUS INCOME OF OPERATING COMPANIES, BY SOURCE AND BY GEOGRAPHIC DIVISIONS: 1912 AND 1907.			
		Total.	Interest on bonds and dividends on stock of other electric railways.	Income from other permanent investments.	Other miscellaneous income.
United States.....	1912	\$18,418,813	\$7,182,933	\$4,315,624	\$6,920,256
	1907	11,556,396	3,255,618	4,972,164	3,328,614
New England.....	1912	907,934	91,913	103,893	712,128
	1907	331,560	27,807	127,484	176,269
Middle Atlantic.....	1912	6,362,082	1,759,690	1,360,285	3,242,107
	1907	3,069,326	1,174,081	552,584	1,342,661
East North Central.....	1912	3,985,314	1,527,733	1,218,350	1,239,231
	1907	2,269,156	547,225	1,010,318	711,613
West North Central.....	1912	297,899	80,455	71,671	145,773
	1907	231,263	500	85,756	145,007
South Atlantic.....	1912	1,910,462	307,766	1,093,720	508,976
	1907	1,072,998	115,253	795,093	162,652
East South Central.....	1912	477,776	251,954	199,341	26,481
	1907	242,952	20,674	204,078	18,200
West South Central.....	1912	1,823,251	1,550,516	1,134	271,601
	1907	1,561,431	759,992	759,050	42,389
Mountain.....	1912	848,117	753,542	39,174	55,401
	1907	523,493	306,974	140,910	75,609
Pacific.....	1912	1,805,978	859,364	228,056	718,558
	1907	2,254,217	303,112	1,296,891	654,214

The total (\$7,182,933) received from interest on bonds and dividends on stock of other electric railways in 1912 represents an average return of 3.48 per cent on the value of the securities as reported in the balance-sheet statement of the companies, namely, \$206,298,309. The "Income from other permanent investments" consists of the returns to the railway companies on other investments of all sorts. The amount of this income (\$4,315,624) represents an average rate of 4.41 per cent on a total reported investment of \$97,956,682.

The income from sources other than those specified, designated as "Other miscellaneous income," includes interest on deposits and loans, office rentals, etc. Table 102 presents the miscellaneous income of operating companies for 1912, 1907, and 1902, by income classes, and Table 103 the distribution of miscellaneous income among the income classes for 1912, by source.

Table 102

CLASS.	MISCELLANEOUS INCOME OF OPERATING COMPANIES, CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS.					
	1912	1907	1902	Per cent of total.		
				1912	1907	1902
Total—All companies..	\$18,418,813	\$11,556,396	\$2,950,628	100.0	100.0	100.0
Class A—\$1,000,000 and over..	13,616,088	6,008,657	2,585,249	73.9	52.0	87.6
Class B—\$250,000 but less than \$1,000,000.....	2,743,982	2,654,409	113,687	14.9	23.0	3.8
Class C—Less than \$250,000..	2,058,743	2,893,330	251,692	11.2	25.0	8.6

Table 103

CLASS.	MISCELLANEOUS INCOME, BY SOURCE, OF OPERATING COMPANIES, CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: 1912.			
	Total.	Interest on bonds and dividends on stock of other electric railways.	Income from other permanent investments.	Other miscellaneous income.
Total—All companies.....	\$18,418,813	\$7,182,933	\$4,315,624	\$6,920,256
Class A—\$1,000,000 and over.....	13,616,088	5,348,335	2,584,522	5,683,231
Class B—\$250,000 but less than \$1,000,000.....	2,743,982	849,718	1,205,489	688,775
Class C—Less than \$250,000.....	2,058,743	984,880	525,613	548,250

## OPERATING EXPENSES.

The factors influencing operating expenses are many and varied. Differences in character of system, whether electric or other, and if electric, whether overhead trolley, conduit, or third rail, or operated without line transmission by gas-electric motors or storage batteries; differences in respect to power whether generated or purchased, and if generated, whether by steam or water; differences in character of roadbed and rolling stock, in character of territory traversed, etc., all affect the cost of maintenance and operation. In no two cases are the conditions identical, and comparisons for different years or between groups of companies are of interest and value only as illustrating general conditions.

The operating cost per unit is commonly used in judging efficiency of management, but the fixed and overhead charges have to be taken into account in judging of the profitableness of railway properties. A comparison of operating expenses and revenues, reduced to units of equipment and traffic, will be found in the section on "General results of operation" (p. 256).

Operating expenses, in accordance with the standard classification of accounts of electric railways prescribed by the Interstate Commerce Commission, are classified under five general accounts: "Way and structures," "Equipment," "Traffic," "Conducting transportation," and "General and miscellaneous." Under these are the various primary accounts, a synopsis of which follows:

#### I. WAY AND STRUCTURES.

*Superintendence of way and structures.*—This account includes salaries and office and traveling expenses of officers and their assistants when directly in charge of maintenance of way and structures, including chief engineer, engineer of maintenance of way, superintendent of electric lines, superintendent of buildings, architect, division engineer, roadmasters, track foremen, and office and field forces; cost of drafting and engineering instruments and repairing same; cost of supplies used by employees whose salaries are charged to this account; office rent, cost of repairing rented offices, and miscellaneous office expenses when separate offices are maintained by officers whose salaries are charged to this account.

*Maintenance of way.*—This account includes all expense, whether for material or labor, pertaining to maintenance of roadway and track, ballast, ties, rails, rail fastenings or joints; special work; underground construction for roads operated by underground electric contact system or cable; paving; roadway tools; cleaning and sanding track; removal of snow, ice, and sand; and repairing tunnels and subways, elevated structures and foundations, bridges, trestles and culverts, crossings, fences, cattle guards and signs, signal and interlocking systems, and telephone and telegraph systems owned by the railway.

*Maintenance of electric lines.*—This account includes the material and labor expense pertaining to the maintenance and renewal of poles and fixtures, underground conduits for wires and cables, transmission systems, and distribution systems.

*Buildings and structures.*—This account includes cost of material and labor expended in repairing and renewing buildings and structures used in the operation of the road; cost of fixtures and repairs and renewals of same; cost of maintaining walks, driveways, and grounds connected with buildings; cost of delivering material, including freight charges, if any; and all incidental expenses connected with the maintenance of buildings and structures.

*Depreciation of way and structures.*—This account includes depreciation of way and structures when carried as an operating expense, in which case charges for renewals should be excluded from all accounts affected by the introduction of this account. Such expenditures for renewals are then to be charged direct to an appropriate replacement account maintained by the prescribed charges to this account.

*Other operations.*—This account includes the proportion of operating expenses chargeable to maintenance of way and structures of the railway department, but the distributed charges for which are made to the primary accounts of another coordinate department, such as electric light, heat, or power, within the same company.

#### II. EQUIPMENT.

*Superintendence of equipment.*—This account includes all expense pertaining to superintendence of equipment (see "Superintendence of way and structures").

*Maintenance of power equipment.*—This account includes cost of material used and labor expended in repairing and renewing power-plant equipment and substation or subsidiary equipment, including switchboards, cables, and feeder terminals, and wiring in connection with same.

*Maintenance of cars and locomotives.*—This account includes the repairing and renewal of all cars and locomotives, including all fixtures and appliances of or attached to the car body or truck (except the electric equipment) and the cost of shifting trucks.

*Maintenance of electric equipment of cars and locomotives.*—This account includes cost of material used and labor expended in repairing and renewing the electric equipment and wiring of cars and locomotives, and cost of shifting the electric equipment from one to another.

*Miscellaneous equipment expenses.*—This account includes all expense for repairing and renewing shop machinery and tools; the lighting and heating of repair shops and other shop expenses; wages of stationary engineers and firemen and unskilled laborers employed in general work in and about shops and shopyards; also cost of repairing and renewing harness and vehicles, including cost of horses purchased to replace others lost by death or worn out in service, etc.

*Depreciation of equipment.*—(See "Depreciation of way and structures.")

*Other operations.*—(See "Other operations" under "Way and structures.")

#### III. TRAFFIC.

This account includes expenses pertaining to superintendence and solicitation of traffic and advertising; salaries and office and traveling expenses of officers and their assistants, including traffic managers, when directly in charge of traffic; cost of supplies used by employees whose salaries are charged to this account; office rent and cost of repairing rented offices, and miscellaneous office expenses when separate offices are maintained by officers whose salaries are charged to this account; salaries and expenses of advertising agents; cost of bill posting, and printing, publishing, and distributing advertising matter; advertising in newspapers and periodicals for the purpose of securing traffic; bulletin boards, cards, cases, display cards, photographs, and postage and express charges on advertising matter; net expense of music, parks, park properties, and resorts (after deducting all income from admittance fees, sale of privileges, etc.), when such expense is incurred primarily for the purpose of attracting traffic and not as an investment; donations made for traffic purposes, and other expenses for attracting traffic; and the expense of traffic associations.

#### IV. CONDUCTING TRANSPORTATION.

*Superintendence of transportation.*—This account includes all expense pertaining to superintendence of transportation (see "Superintendence of way and structures").

##### Power.

*Power-plant employees.*—This account includes all expenditures for labor in power plants, except labor employed in making repairs and renewals.

*Substation employees.*—This account includes all expenditures for labor in substations, except labor employed in making repairs and renewals.

*Fuel for power.*—This account includes all expenditures for coal, oil, gas, and other fuel used at power plants, including transportation.

*Other power supplies and expenses.*—This account includes all expenditures for water used to produce steam or to operate a water-power plant; for pumping; for rent of ponds, streams, and pipe lines; for water rents; for boiler compounds, lubricants, waste, carbon brushes, fuses, and lamps; and for other supplies and expenses of power plants and stations.

*Power purchased.*—This account includes all expenditures for power purchased from other companies.

*Power exchanged—balance.*—This account includes the net debit or credit balance in cases where power is received from and delivered to other companies.

*Other operations.*—(See "Other operations" under "Way and structures.")

#### *Operation of cars.*

*Conductors, motormen, and trainmen.*—This account includes wages of all conductors, motormen, and other trainmen, whether engaged in passenger, freight, express, or mail service.

*Miscellaneous transportation expenses.*—This account includes wages of transfer agents, switch tenders, switchmen, flagmen, watchmen, trail-car couplers, bridge tenders, and other miscellaneous car-service employees: all expenditures for lubricants and waste for cars and electric equipment of cars; incandescent lamps, oil, and other supplies for lighting cars; supplies for cleaning cars; fuel for heating cars; tools and other materials and supplies, except such as are used for repairs or renewals; cost of tickets, transfers, and baggage checks; secret inspection; conductors' books and punches; portable registers; tools for motormen; car-service employees' badges and uniforms, and all other car-service supplies and expenses: all *station expense*, including wages of station masters, of freight, express, ticket, baggage, and other station agents, and of announcers, station gatemen, choppersmen, platform men, janitors, porters, watchmen, and other station employees; wages of warehousemen, freight-house foremen, truckmen, checkmen, and other express and freight-house employees; all expenditures for heating and lighting stations, waiting rooms, freight houses, and other station buildings; rent of station buildings; cost of furniture, of tools and implements for handling freight and baggage, and of station employees' uniforms and badges; and outlays for water, ice, and all other station expenses: all *car-house expense*, including wages of car-house foremen, watchmen, car placers, and car shifters, of car, motor, and brake inspectors, and of car cleaners, lamp and headlight tenders, car oilers, car-stove firemen, trolley oilers, and other car-house employees not engaged in making repairs or renewals; and all car-house supplies and expenses: wages of employees engaged in operating *signal and interlocking systems* covering the movement of cars, such as towermen, signalmen, levermen, and lampmen; and cost of supplies used in operating signal and interlocking systems, and supplies for signal offices: wages of *telephone and telegraph operators*; cost of supplies for telephone and telegraph service; payments for use of telephone and telegraph lines; and other telephone and telegraph expenses in connection with transportation: wages of drivers and helpers employed on wagons used for the *collection and delivery of express matter*; amounts paid for handling express matter in wagons or other vehicles; and other expenses incident to the collection and delivery of express matter: all expenditures for *loss, damage, delays, and destruction of freight, express, and baggage* intrusted to a carrier for transportation, and expenses directly incident thereto; and cost of getting derailed cars on track and removing obstructions and wreckage: and all other expenses in connection with conducting transportation not properly chargeable to other accounts.

#### V. GENERAL AND MISCELLANEOUS.

*General expenses.*—This account includes salaries and traveling and incidental expenses of chairman of the board, president, vice president, treasurer, secretary, comptroller, auditor, general manager, assistant general manager, chief engineer, general superintendent, purchasing agent, and all other officers when their jurisdiction extends over the entire system; salaries and traveling and incidental expenses of traveling auditors, bookkeepers, cashiers, paymasters, stenographers, and clerks employed in counting cash, tickets, transfers, etc.: outlays for *office supplies and expenses*; repairs and renewals of office furniture; wages of janitors, porters, and messengers; rent, and all other mis-

cellaneous expenses of general offices: *law expenses* (except those incurred in the defense and settlement of damage claims), including salaries and expenses of all counsel, solicitors, and attorneys, their clerks and attendants, and expenses of their offices; cost of law books, printing briefs, legal forms, testimony, reports, etc.; fees and retainers for services of attorneys not regular employees; court costs and payments of special, notarial, and witness fees; expenses connected with taking depositions; and all law and court expenses not provided for elsewhere: salaries and expenses incurred in connection with conducting a *relief department*, and contributions made to such department; *pensions* paid to retired employees, and expenses in connection therewith; and the cost of telephone service, telegrams, gratuities, subscriptions, donations (except those provided for under "Traffic"), and other miscellaneous expenses connected with the general management not otherwise provided for.

*Other operations.*—(See "Other operations" under "Way and structures.")

*Injuries and damages.*—This account includes all expenditures on account of persons killed or injured and property damaged; salaries and expenses of claim agents, investigators, adjusters, and others engaged in the investigation of accidents and adjustment of claims; salaries, fees, and expenses of surgeons and doctors; expenditures for nursing, hospital attendance, and medical and surgical supplies; fees and expenses of coroners and undertakers; fees of witnesses and others; law expenses incurred in connection with the defense or settlement of damage claims, including the compensation of general solicitor or counsel; salaries, fees, and expenses of attorneys; fees of court stenographers; cost of law books, printing of briefs, court and other records; court costs; expenses connected with taking depositions; and all other like expenses connected with the settlement of claims for injuries and damages; but does not include expenses incurred in connection with the settlement of claims for loss, damage, or delay of goods intrusted for transportation (see "Miscellaneous transportation expenses").

*Insurance.*—This account includes premiums paid to insurance companies for fire, fidelity, boiler, casualty, burglary, and all other insurance. The amount set aside as an insurance reserve by a company carrying its own insurance in whole or in part should be charged to this account.

*Stationery and printing.*—This account includes expenditures for stationery and printing, including postage, and for stationery supplies not elsewhere provided for.

*Store and stable expenses.*—This account includes all salaries and expenses in connection with storerooms, including cost of sending material and supplies from general storerooms to branch storerooms, and of collecting scrap material; cost of feed, keep, and shoeing of horses; wages of stablemen and hostlers; veterinary expenses; and all other stable expenses. This account should include the stable expenses of all horses regardless of where they are used. (The replacement of horses lost by death or worn out in service, and repair and renewal of harness and vehicles are charged to "Miscellaneous equipment expenses.")

*Rent of tracks and terminals.*—This account includes payments to other companies for rent or use of their tracks, whether on the basis of a fixed charge per month or per year, or a proportion of interest on valuation, or a proportion of expenses incurred in maintaining and operating such tracks, or car mileage, or a charge per car or per passenger, or under any other arrangement; also payments for use of facilities at terminal points, including main and other tracks and freight-house facilities, proportion of expenses of handling freight, union station facilities, etc. (Rent of leased line not operated by the lessor company is treated as a deduction from income under "Rent of leased lines and terminals.")

*Rent of equipment.*—This account includes payments to other companies for rent or use of their cars, of electric equipment of cars, and of other equipment.



Table 162 (p. 311) gives the statistics of operating expense by general accounts, for 1912, 1907, and 1902, by geographic divisions and states, and Table 163 (p. 314) the statistics of operating expense by primary

accounts, for 1912, by geographic divisions and states. Table 104 is a comparative summary for the industry as a whole for the three years, and Table 105 gives the per cent distribution of accounts.

STREET AND ELECTRIC RAILWAYS—OPERATING EXPENSES, BY ACCOUNTS: 1912, 1907, AND 1902.

Table 104 ACCOUNT.	1912	1907	1902	PER CENT OF INCREASE. <sup>1</sup>	
				1907-1912	1902-1907
Number of companies.....	975	939	799	3.8	17.5
Operating expenses.....	\$332,896,356	\$251,309,252	\$142,312,597	32.5	76.6
GENERAL ACCOUNTS.					
Way and structures.....	46,371,685	28,520,925	13,600,236	62.6	109.7
Equipment.....	40,056,378	31,485,810	16,876,532	27.2	88.8
Traffic.....	2,606,057	<sup>2</sup> 1,730,851	<sup>2</sup> 1,122,816	( <sup>3</sup> )	54.2
Conducting transportation.....	189,689,432	141,095,350	84,035,067	34.4	67.9
Superintendence of transportation.....	7,127,204	3,545,418	2,598,935	101.0	36.4
Power.....	60,484,917	43,972,669	23,062,328	37.6	90.7
Operation of cars.....	122,077,311	93,577,263	58,373,804	30.5	60.3
General and miscellaneous.....	54,172,804	42,307,443	24,689,193	28.0	71.4
Wages, supplies, and expenses incident to electric service, not elsewhere included.....		6,168,873	2,188,753		181.8
PRIMARY ACCOUNTS.					
Way and structures:					
Superintendence of way and structures.....	2,579,774				
Maintenance of way.....	30,162,653	21,824,113	9,640,571	( <sup>3</sup> )	126.4
Maintenance of electric lines.....	5,513,272	4,777,697	2,959,182	( <sup>3</sup> )	61.5
Buildings and structures.....	2,674,899	1,919,115	1,000,483	( <sup>3</sup> )	91.8
Depreciation of way and structures.....	3,705,511				
Other operations.....	1,735,576				
Equipment:					
Superintendence of equipment.....	1,672,393				
Maintenance of power equipment.....	3,769,735	3,834,017	2,180,393	( <sup>3</sup> )	75.9
Maintenance of cars and locomotives.....	16,936,623	13,814,296	7,659,428	( <sup>3</sup> )	80.4
Maintenance of electric equipment of cars and locomotives.....	9,877,340	10,753,321	5,325,125	( <sup>3</sup> )	101.9
Miscellaneous equipment expenses.....	3,039,164	3,084,176	1,511,586	( <sup>3</sup> )	104.0
Depreciation of equipment.....	3,670,376				
Other operations.....	1,090,747				
Traffic expenses.....	2,606,057	<sup>2</sup> 1,730,851	<sup>2</sup> 1,122,816	( <sup>3</sup> )	54.2
Conducting transportation:					
Superintendence of transportation.....	7,127,204	3,545,418	2,598,935	101.0	36.4
Power—					
Power-plant employees.....	6,325,506	7,876,355	4,599,487	3.6	71.2
Substation employees.....	1,831,196				
Fuel for power.....	20,145,466	21,058,259	12,827,322	-4.3	64.2
Other power supplies and expenses.....	2,021,521	2,695,797	1,764,001	-25.0	52.8
Power purchased.....	24,696,647	12,342,255	3,871,518	100.1	218.8
Other operations.....	5,464,581				
Operation of cars—					
Conductors, motormen, and trainmen.....	98,185,596	74,836,506	48,733,793	31.2	53.6
Miscellaneous transportation expenses.....	23,891,715	18,740,757	9,640,011	27.5	94.4
General and miscellaneous:					
General expenses.....	19,133,289	15,173,728	9,585,862	26.1	58.3
Injuries and damages.....	20,707,960	18,176,305	9,395,545	13.9	93.5
Insurance.....	3,151,576	3,137,071	2,080,875	0.5	50.8
Stationery and printing.....	1,105,422	838,562	496,381	31.8	68.9
Store and stable expenses.....	2,040,409	1,639,102	1,659,237	24.5	-1.2
Rent of tracks and terminals.....	3,676,337	2,768,786	1,471,293	32.8	88.2
Rent of equipment.....	1,197,022	573,829	( <sup>3</sup> )	108.6	
Other operations.....	3,160,839				
Wages, supplies, and expenses incident to electric service, not elsewhere included.....		6,168,873	2,188,753		181.8

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Advertising and attractions only.

<sup>3</sup> Not comparable.

<sup>4</sup> Expenses of light and power departments not distributed among prior accounts.

<sup>5</sup> Not reported separately.

The increase in the total operating expenses from 1907 to 1912 was \$81,587,104, or 32.5 per cent, as compared with an increase of \$149,323,846, or 35.7 per cent, in operating revenues, the rate of increase in revenues being slightly greater than that in expenses. On the other hand, for the period 1902-1907 the percentage of increase in operating expenses (76.6) materially exceeded that in operating revenues (68.9).

Of the more important items, the per cent of increase in purchased power is conspicuously large. On account of changes in the classification of accounts, not all of the primary accounts as reported in 1912 and 1907 are strictly comparable, but it is appar-

ent that the increase in cost of maintenance of way has been especially large. The apparent decrease in expenses for maintenance of electric equipment of cars and locomotives and for miscellaneous equipment, in 1912 as compared with 1907, is due to book-keeping changes, for equipment expense as a whole increased 27.2 per cent. The decrease in "Fuel for power" and "Other power supplies and expenses" for the last half decade is due in part to the change from generation to the purchase of power on the part of many companies. The decrease in the ratio for "Injuries and damages," which item constituted 6.2 per cent of operating expenses in 1912, as compared



with 7.2 per cent in 1907 and 6.6 per cent in 1902, indicates a material betterment since 1907 of conditions bearing upon the safety of passengers, employees, and others. The average expense for injuries and damages per revenue passenger carried was 0.217 of a cent in 1912, as compared with 0.244 in 1907 and 0.197 in 1902. Referred to a basis of passenger revenue, 4.1 per cent went to pay injuries and damages in 1912, 4.8 per cent in 1907, and 4 per cent in 1902.

**Table 105**

ACCOUNT.	PER CENT DISTRIBUTION OF OPERATING EXPENSES, BY ACCOUNTS (BASED ON TABLE 104).					
	Operating expenses.			General accounts.		
	1912	1907	1902	1912	1907	1902
Operating expenses.....	100.0	100.0	100.0	100.0	100.0	100.0
Way and structures.....	13.9	11.4	9.6	100.0	100.0	100.0
Superintendence of way and structures.....	0.8			5.6		
Maintenance of way.....	9.1	8.7	6.8	65.0	76.5	70.9
Maintenance of electric lines.....	1.7	1.9	2.1	11.9	16.8	21.8
Buildings and structures.....	0.8	0.8	0.7	5.8	6.7	7.3
Depreciation of way and structures.....	1.1			8.0		
Other operations.....	0.5			3.7		
Equipment.....	12.0	12.5	11.7	100.0	100.0	100.0
Superintendence of equipment.....	0.5			4.2		
Maintenance of power equipment.....	1.1	1.5	1.5	9.4	12.2	13.1
Maintenance of cars and locomotives.....	5.1	5.5	5.4	42.3	43.9	45.9
Maintenance of electric equipment of cars and locomotives.....	3.0	4.3	3.7	24.7	34.1	31.9
Miscellaneous equipment expenses.....	0.9	1.2	1.1	7.6	9.8	9.1
Depreciation of equipment.....	1.1			9.2		
Other operations.....	0.3			2.7		
Traffic expenses.....	0.8	0.7	0.8			
Conducting transportation.....	57.0	56.1	59.1	100.0	100.0	100.0
Superintendence of transportation.....	2.1	1.4	1.8	3.8	2.5	3.1
Power.....	18.2	17.5	16.2	31.9	31.2	27.4
Power-plant employees.....	1.9	3.1	3.2	3.3	5.6	5.5
Substation employees.....	0.6			1.0		
Fuel for power.....	6.1	8.4	9.0	10.6	14.9	15.3
Other power supplies and expenses.....	0.6	1.1	1.2	1.1	1.9	2.1
Power purchased.....	7.4	4.9	2.7	13.0	8.7	4.6
Other operations.....	1.6			2.9		
Operation of cars.....	36.7	37.2	41.0	64.4	66.3	69.5
Conductors, motormen, and trainmen.....	29.5	29.8	34.2	51.8	53.0	58.0
Miscellaneous transportation expenses.....	7.2	7.5	6.8	12.6	13.3	11.5
General and miscellaneous.....	16.3	16.8	17.3	100.0	100.0	100.0
General expenses.....	5.7	6.0	6.7	35.3	35.9	38.3
Injuries and damages.....	6.2	7.2	6.6	38.2	43.0	38.1
Insurance.....	0.9	1.2	1.5	5.8	7.4	8.4
Stationery and printing.....	0.3	0.3	0.3	2.0	2.0	2.0
Store and stable expenses.....	0.6	0.7	1.2	3.8	3.9	6.7
Rent of tracks and terminals.....	1.1	1.1	1.0	6.8	6.5	6.0
Rent of equipment.....	0.4	0.2		2.2	1.4	
Other operations.....	1.0			5.8		
Wages, supplies, and expenses incident to electric service, not elsewhere included.....		2.4	1.5			

*Operating expenses of companies classified according to income from railway operations.*—Table 106 shows, for 1912, the general operating expense accounts for companies classified according to income from railway operations, and Table 107 gives, for 1912, the per cent distribution of operating expenses, by class and by accounts. Figures are not available for 1907 and 1902 which are comparable, as to accounts, with those for 1912.

The percentages of operating expenses represented by the several accounts show some variations for the different classes. Companies of class A show the largest proportion of operating expense consumed in maintenance of way and structures, equipment, superintendence of transportation, and operation of cars; while those of class C stand highest for power and general and miscellaneous expense, companies of class B falling into line between those of the other two

classes in each case. Economies in power expense and in general management accompany growth in size. The large urban systems operating in congested districts are in classes A and B, and this fact undoubtedly accounts for the relatively low ratios for cost of power and for general and miscellaneous expenses shown by companies in these classes.

**Table 106**

ACCOUNT.	OPERATING EXPENSES BY ACCOUNTS—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: 1912.			
	Total.	Class A. \$1,000,000 and over.	Class B. \$250,000 but less than \$1,000,000.	Class C. Less than \$250,000.
Number of companies.....	975	91	155	729
Operating expenses.....	\$332,896,356	\$239,739,927	\$53,250,043	\$39,906,386
Way and structures.....	46,371,685	33,639,324	7,399,478	5,332,883
Equipment.....	40,056,378	29,924,214	5,811,139	4,311,025
Traffic.....	2,606,057	1,343,813	755,013	507,231
Conducting transportation.....	189,689,432	137,849,515	29,733,036	22,106,881
Superintendence of transportation.....	7,127,204	5,500,233	983,641	643,330
Power.....	60,484,917	38,963,303	11,345,267	10,176,347
Operation of cars.....	122,077,311	93,885,979	17,404,128	11,287,204
General and miscellaneous.....	54,172,804	36,973,061	9,551,377	7,648,366

**Table 107**

ACCOUNT.	PER CENT DISTRIBUTION OF OPERATING EXPENSES BY ACCOUNTS—COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: 1912 (BASED ON TABLE 106).							
	Per cent of total.			Per cent of operating expenses.				
	Class A.	Class B.	Class C.	Total.	Class A.	Class B.	Class C.	
Number of companies.....	9.3	15.9	74.8					
Operating expenses.....	72.0	16.0	12.0	100.0	100.0	100.0	100.0	
Way and structures.....	72.5	16.0	11.5	13.9	14.0	13.9	13.4	
Equipment.....	74.7	14.5	10.8	12.0	12.5	10.9	10.8	
Traffic.....	51.6	29.0	19.5	0.8	0.6	1.4	1.3	
Conducting transportation.....	72.7	15.7	11.7	57.0	57.5	55.8	55.4	
Superintendence of transportation.....	77.2	13.8	9.0	2.1	2.3	1.8	1.6	
Power.....	64.4	18.8	16.8	18.2	16.3	21.4	25.5	
Operation of cars.....	76.5	14.3	9.2	36.7	39.0	32.7	28.3	
General and miscellaneous.....	68.3	17.6	14.1	16.3	15.4	17.9	19.2	

*Operating expenses of companies without and with commercial lighting.*—A grouping of the operating expenses of companies, classified as "Without commercial lighting," "With commercial lighting," and "Miscellaneous," for 1912, is given in Table 108, and percentages of distribution based thereon are shown in Table 109. Comparable statistics for 1907 and 1902 are not available.

**Table 108**

ACCOUNT.	OPERATING EXPENSES, BY ACCOUNTS—COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING: 1912.			
	Total.	Class X. Without commercial lighting.	Class Y. With commercial lighting.	Class Z. Miscellaneous.
Number of companies.....	975	760	168	47
Operating expenses.....	\$332,896,356	\$273,622,168	\$58,520,068	\$754,120
Way and structures.....	46,371,685	37,976,257	8,316,381	79,047
Equipment.....	40,056,378	33,275,115	6,714,229	67,034
Traffic.....	2,606,057	2,012,865	579,887	13,305
Conducting transportation.....	189,689,432	158,007,341	31,241,842	440,249
Superintendence of transportation.....	7,127,204	6,139,477	973,143	14,584
Power.....	60,484,917	46,855,106	13,424,184	205,627
Operation of cars.....	122,077,311	105,012,758	16,844,515	220,038
General and miscellaneous.....	54,172,804	42,350,590	11,667,729	154,485

Table 109

ACCOUNT.	PER CENT DISTRIBUTION OF OPERATING EXPENSES, BY ACCOUNTS—COMPANIES WITHOUT AND WITH COMMERCIAL LIGHTING: 1912 (BASED ON TABLE 108).					
	Per cent of total.			Per cent of operating expenses.		
	Class X.	Class Y.	Class Z.	Total.	Class X.	Class Y.
Number of companies.....	78.0	17.2	4.8	100.0	100.0	100.0
Operating expenses.....	82.2	17.6	0.2	100.0	100.0	100.0
Way and structures.....	81.9	17.9	0.2	13.9	13.9	14.2
Equipment.....	83.0	17.8	0.2	12.0	12.2	11.5
Traffic.....	77.2	22.3	0.5	0.8	0.7	1.0
Conducting transportation.....	83.3	16.5	0.2	57.0	57.7	53.4
Superintendence of transportation.....	86.1	13.7	0.2	2.1	2.2	1.7
Power.....	77.5	22.2	0.3	18.2	17.1	22.9
Operation of cars.....	86.0	13.8	0.2	36.7	38.4	28.9
General and miscellaneous.....	78.2	21.5	0.3	16.3	15.5	19.9

Power expense is naturally a somewhat more important item of expense for companies of class Y than those of class X, while operation of cars represents but 28.9 per cent of operating expenses for class Y, as compared to 38.4 per cent for class X.

*Operating expenses of companies classified as "Elevated and subway" and "Surface."*—Table 110 presents the leading operating statistics for the "Elevated and subway" and "Surface" groups for 1912.

The expenses of equipment maintenance and of conducting transportation are proportionately high for the elevated and subway lines; and, conversely, outlays for maintenance of way and structures and general and miscellaneous expense are relatively low.

Table 110

ACCOUNT.	OPERATING EXPENSES, BY ACCOUNTS—COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE": 1912.				
	Total.	Elevated and subway.	Surface.	Per cent of operating expenses.	
				Elevated and subway.	Surface.
Number of companies.....	975	7	968	100.0	100.0
Operating expenses.....	\$322,896,356	\$23,612,867	\$309,283,489	100.0	100.0
Way and structures.....	46,371,685	2,599,183	43,772,502	11.0	14.1
Equipment.....	40,056,378	3,874,365	36,182,013	16.4	11.7
Traffic.....	2,006,057	19,005	2,587,052	0.1	0.8
Conducting transportation.....	189,680,432	14,532,501	175,156,931	61.5	56.6
General and miscellaneous.....	54,172,804	2,587,813	51,584,991	11.0	16.7

## DEDUCTIONS FROM INCOME.

The deductions from income shown in the census tables include taxes, interest, rent of leased lines and terminals, charges for sinking funds, and various miscellaneous deductions. In the standard form of accounting for electric railways adopted by the Interstate Commerce Commission and the American Electric Railway Accountants Association, salaries and maintenance of organization are included in operating expenses, and charges for permanent improvements are deductions from net income. Table 111 gives the statistics for deductions from income for all operating companies for 1912, 1907, and 1902.

Table 111

ACCOUNT.	OPERATING COMPANIES—DEDUCTIONS FROM INCOME, BY ACCOUNTS.								
	1912	1907	1902	Per cent of increase. <sup>1</sup>			Per cent distribution.		
				1902-1912	1907-1912	1902-1907	1912	1907	1902
Number of companies.....	975	930	799	22.0	3.8	17.5	100.0	100.0	100.0
Deductions from income.....	\$191,123,408	\$138,094,716	\$77,595,053	146.3	38.4	78.0	100.0	100.0	100.0
Taxes.....	35,027,965	19,755,902	13,078,899	167.8	77.3	51.0	18.3	14.3	10.9
On real and personal property.....	15,058,239	9,404,616	5,835,542	168.3	65.4	62.2	8.2	6.9	7.6
On capital stock.....	3,899,146	2,348,439	2,931,252	33.0	66.0	-19.9	2.0	1.7	3.8
On earnings.....	9,486,792	5,437,028	2,719,287	248.9	74.5	99.9	5.0	3.9	3.6
Federal corporation tax.....	1,016,901	—	—	—	—	—	0.6	—	—
Miscellaneous.....	4,966,887	2,505,519	1,592,818	211.8	98.2	57.3	2.6	1.8	2.1
Interest on funded and floating debt and mortgages.....	98,026,338	63,740,744	38,085,911	157.4	53.8	67.4	51.3	46.2	49.1
Rent of leased lines and terminals.....	44,784,521	48,022,596	25,518,225	75.5	-6.8	88.2	23.4	34.8	32.9
Charges for sinking fund.....	6,220,136	( <sup>2</sup> )	( <sup>2</sup> )	—	—	—	3.3	—	—
Miscellaneous deductions.....	7,056,448	0,575,774	912,018	—	—	—	3.7	4.8	1.2

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Included under "Miscellaneous deductions."

Deductions from income as a whole increased at the rate of 38.4 per cent for the period 1907–1912, as compared with 78 per cent for the preceding five-year interval, but taxes increased by 77.3 per cent and interest by 53.8 per cent during the later period.

*Taxes.*—Taxes represented 18.3 per cent of all deductions from income in 1912, as compared with 14.3 per cent in 1907 and 16.9 per cent in 1902, and the proportionate increase appears in every class of tax for 1912, as compared with either of the prior years, with the single exception of the tax on capital

stock, which was 2 per cent of all deductions in 1912, as compared with 3.8 per cent in 1902.

This growth in the tax burden is specially marked when referred to the basis of income available for the payment of fixed charges. In 1912 taxes consumed 13.8 per cent of the gross income remaining after the payment of operating expenses, as compared with 11.1 per cent in 1907 and 12.1 per cent in 1902. The following statement shows this ratio of taxes to gross income less operating expenses, by geographic divisions:

DIVISION.	RATIO OF TAXES TO GROSS INCOME LESS OPERATING EXPENSES (PER CENT).		
	1912	1907	1902
United States.....	13.8	11.1	12.2
New England.....	21.1	17.2	19.4
Middle Atlantic.....	12.6	9.4	11.9
East North Central.....	15.2	11.2	10.7
West North Central.....	14.0	11.4	10.6
South Atlantic.....	11.9	11.6	11.6
East South Central.....	14.4	15.0	11.7
West South Central.....	10.4	9.3	13.1
Mountain.....	10.7	6.6	8.5
Pacific.....	12.2	11.5	10.0

In all the divisions, with the exception of the South Central, taxes consumed a larger proportion of the income left after paying operating expenses in 1912 than in either of the prior years, the proportion for the East South Central division being largest in 1907 and for the West South Central division in 1902. A marked feature is the very high ratio for the railways of the New England states.

Table 112 presents the statistics for deductions from income, by geographic divisions and states, for 1912, 1907, and 1902.

STREET AND ELECTRIC RAILWAYS—OPERATING COMPANIES—DEDUCTIONS FROM INCOME, BY ACCOUNTS, BY GEOGRAPHIC DIVISIONS AND STATES: 1912, 1907, AND 1902.

Table 112	DIVISION AND STATE.	Census.	Number of companies.	Total.	Taxes.	Interest.	Rent of leased lines and terminals.	Charges for sinking fund. <sup>1</sup>	Miscellaneous.
	UNITED STATES.....	1912	975	\$191,123,408	\$35,027,965	\$98,025,338	\$44,784,521	\$6,229,136	\$7,056,448
		1907	939	138,094,716	19,755,602	63,740,744	48,022,596		6,575,774
		1902	799	77,595,053	13,078,899	38,085,911	25,518,225		912,018
GEOGRAPHIC DIVISIONS:									
	New England.....	1912	91	14,062,569	4,237,429	4,639,940	4,943,924	54,273	187,003
		1907	118	11,454,167	2,632,264	3,635,477	4,031,369		1,155,057
		1902	137	7,054,630	2,035,666	2,882,605	2,108,160		28,209
	Middle Atlantic.....	1912	246	75,286,805	11,249,018	30,679,925	2,908,785	1,824,521	1,624,556
		1907	247	60,453,506	6,149,629	16,891,258	35,106,326		2,306,293
		1902	219	36,046,981	5,436,849	13,962,704	16,208,237		439,191
	East North Central.....	1912	222	45,893,986	9,211,636	25,000,144	6,219,368	2,099,581	3,363,257
		1907	220	29,409,640	4,616,994	16,229,354	7,770,335		792,957
		1902	177	16,662,311	2,653,112	8,673,771	4,941,643		393,785
	West North Central.....	1912	85	11,225,491	2,490,045	8,102,645	177,948	123,223	331,630
		1907	73	10,394,107	1,789,058	7,033,298	115,499		1,456,252
		1902	58	6,306,643	868,578	3,158,091	2,254,228		25,746
	South Atlantic.....	1912	107	13,277,195	2,353,998	7,826,289	2,395,330	161,332	540,246
		1907	100	7,998,784	1,548,424	5,982,598	345,370		122,392
		1902	75	5,260,379	806,718	4,437,607	2,695		13,359
	East South Central.....	1912	45	4,727,566	1,105,753	3,438,560	11,698	83,913	87,642
		1907	40	3,763,689	833,731	2,780,485			149,473
		1902	34	1,796,235	332,896	1,458,580			4,759
	West South Central.....	1912	79	5,139,540	883,447	3,414,904	551,667	197,999	91,523
		1907	50	3,195,729	545,055	2,278,835	320,449		51,390
		1902	32	957,934	244,288	707,016			6,630
	Mountain.....	1912	40	3,729,066	589,860	2,468,536	179,312	387,366	103,992
		1907	28	1,911,327	238,304	1,503,607			109,416
		1902	18	787,361	109,762	674,228	3,262		109
	Pacific.....	1912	60	17,781,190	2,006,779	12,454,395	396,489	1,296,928	726,599
		1907	63	9,513,767	1,402,143	7,345,832	333,248		432,544
		1902	49	2,722,579	591,040	2,131,309			230
NEW ENGLAND:									
	Maine.....	1912	16	1,193,095	120,208	806,522	216,450	25,955	23,951
		1907	17	469,277	43,383	425,894			
		1902	19	337,050	29,704	301,772	4,000		1,574
	New Hampshire.....	1912	13	211,831	39,912	111,618		7,495	52,806
		1907	16	112,510	15,919	96,591			
		1902	7	83,786	7,822	47,390	28,574		
	Vermont.....	1912	9	169,912	19,596	150,315	1		
		1907	10	117,601	9,795	107,451			355
		1902	9	45,089	4,427	40,662			
	Massachusetts.....	1912	43	9,047,779	3,108,197	3,269,282	2,542,459	20,823	107,018
		1907	62	7,061,339	1,911,510	2,610,927	2,145,639		393,263
		1902	74	5,108,619	1,609,496	1,524,248	1,967,540		7,335
	Rhode Island and Connecticut.....	1912	10	3,439,952	949,516	302,203	2,185,005		3,228
		1907	13	3,693,440	651,657	394,614	1,885,730		761,439
		1902	28	1,480,086	384,207	968,533	108,046		19,300
MIDDLE ATLANTIC:									
	New York.....	1912	101	43,168,721	7,735,345	21,539,215	12,684,642	728,452	481,067
		1907	101	35,354,087	4,297,725	9,730,805	19,279,392		2,046,165
		1902	96	19,552,955	3,428,461	10,333,127	5,719,589		71,778
	New Jersey.....	1912	24	7,232,887	1,254,842	2,732,775	3,229,045		16,225
		1907	24	5,755,396	627,510	2,840,704	2,272,148		15,034
		1902	25	3,625,740	431,912	1,573,411	1,686,217		34,200
	Pennsylvania.....	1912	121	24,885,197	2,258,831	6,407,935	13,995,098	1,096,069	1,127,264
		1907	122	19,344,023	1,224,394	4,319,749	13,554,786		245,094
		1902	98	12,868,286	1,576,476	2,056,166	8,902,431		333,213

<sup>1</sup>Included with "Miscellaneous" in 1907 and 1902.

## STREET AND ELECTRIC RAILWAYS.

STREET AND ELECTRIC RAILWAYS—OPERATING COMPANIES—DEDUCTIONS FROM INCOME, BY ACCOUNTS, BY GEOGRAPHIC DIVISIONS AND STATES: 1912, 1907, AND 1902—Continued.

Table 112—Continued. DIVISION AND STATE.	Census.	Number of com- panies.	Total.	Taxes.	Interest.	Rent of leased lines and terminals.	Charges for sinking fund. <sup>1</sup>	Miscella- neous.
<b>EAST NORTH CENTRAL:</b>								
Ohio.....	1912	75	\$11,635,394	\$2,525,422	\$5,429,129	\$3,390,165	\$98,120	\$192,558
	1907	73	9,215,583	1,387,052	4,612,432	3,155,380		60,719
	1902	62	4,137,866	601,142	2,457,584	1,066,636		12,504
Indiana.....	1912	34	5,727,969	536,210	3,217,272	1,744,017	170,520	59,950
	1907	33	4,477,535	499,273	1,883,272	1,966,943		128,047
	1902	26	1,201,297	185,014	984,391			31,892
Illinois.....	1912	67	20,903,293	4,885,069	12,182,594	494,136	1,263,086	2,078,408
	1907	70	10,668,510	2,018,189	5,907,635	2,648,012		94,674
	1902	48	8,453,191	1,488,359	3,037,830	3,875,007		51,995
Michigan.....	1912	22	4,642,698	760,270	2,419,622	583,550	514,935	364,321
	1907	24	2,867,083	386,514	2,445,809			34,760
	1902	24	1,788,797	228,538	1,547,772			12,487
Wisconsin.....	1912	24	2,984,632	504,665	1,751,527	7,500	52,920	668,020
	1907	20	2,180,929	325,966	1,380,206			474,757
	1902	17	1,081,160	150,059	646,194			284,907
<b>WEST NORTH CENTRAL:</b>								
Minnesota.....	1912	9	1,890,203	612,291	1,178,750	3,000	1,250	94,912
	1907	5	2,128,156	415,965	1,122,138			590,053
	1902	5	1,027,121	131,128	870,038	24,064		1,891
Iowa.....	1912	24	1,478,449	209,664	1,053,700	3,840	66,973	144,272
	1907	24	894,434	99,582	749,454	2,913		42,485
	1902	22	429,373	54,115	353,118			22,140
Missouri.....	1912	19	5,908,974	1,249,643	4,568,005	14,148	55,000	17,178
	1907	14	6,150,063	1,098,222	4,490,780	14,400		546,661
	1902	16	4,635,401	646,682	1,756,840	2,230,184		1,715
North and South Dakota.....	1912	5	40,865	7,375	30,805			2,085
	1907	5	19,993	2,069	17,761			163
Nebraska.....	1912	7	1,037,505	265,235	613,977	156,960		1,333
	1907	8	895,573	139,398	390,017	97,840		288,318
	1902	4	150,297	28,252	122,045			
Kansas.....	1912	21	874,495	145,837	657,408			71,250
	1907	17	305,888	33,822	263,148	346		8,572
	1902	11	64,451	8,401	56,050			
<b>SOUTH ATLANTIC:</b>								
Delaware, Maryland, and District of Columbia.....	1912	25	6,031,007	1,165,421	3,957,157	647,264	72,131	189,034
	1907	23	3,911,923	793,877	3,057,630	48,700		11,716
	1902	21	3,314,632	576,658	2,734,999	1,975		1,000
Virginia.....	1912	18	2,434,012	384,277	1,509,103	360,944	16,561	163,127
	1907	22	1,287,931	240,169	758,190	239,375		52,197
	1902	16	547,730	46,845	490,484			10,401
West Virginia.....	1912	21	994,778	162,645	799,766	26,801	5,000	566
	1907	15	743,200	93,493	639,756	4,795		5,156
	1902	8	265,842	28,030	237,812			
North Carolina.....	1912	13	534,904	59,479	348,740	56,678		70,007
	1907	11	353,806	39,058	220,922	52,500		41,326
	1902	7	98,993	10,791	87,219			983
South Carolina.....	1912	6	300,118	36,895	97,820	161,443	3,960	
	1907	7	390,713	42,007	340,706			8,000
	1902	7	203,106	21,109	180,392	720		975
Georgia.....	1912	14	2,557,669	447,764	827,888	1,142,200	25,000	114,807
	1907	12	1,124,989	200,235	830,757			3,997
	1902	10	755,207	110,846	644,361			
Florida.....	1912	10	424,717	97,517	285,815		38,680	2,705
	1907	10	180,222	49,585	136,637			
	1902	6	74,779	12,439	62,340			
<b>EAST SOUTH CENTRAL:</b>								
Kentucky.....	1912	10	1,315,752	376,922	924,203	10,462	2,900	1,175
	1907	13	1,109,233	313,328	789,097			6,808
	1902	12	777,433	177,775	598,594			1,064
Tennessee.....	1912	12	1,919,301	419,175	1,418,102			82,024
	1907	9	1,418,575	310,140	1,040,975			67,460
	1902	8	595,356	113,573	478,473			3,310
Alabama.....	1912	11	1,195,680	276,354	822,634	1,236	81,013	4,443
	1907	10	988,048	178,373	741,292			68,383
	1902	9	384,762	37,047	347,330			385
Mississippi.....	1912	12	296,833	33,302	263,531			
	1907	8	247,833	31,890	209,121			6,822
	1902	5	38,684	4,501	34,183			

<sup>1</sup>Included with "Miscellaneous" in 1907 and 1902.

## STREET AND ELECTRIC RAILWAYS—OPERATING COMPANIES—DEDUCTIONS FROM INCOME, BY ACCOUNTS, BY GEOGRAPHIC DIVISIONS AND STATES: 1912, 1907, AND 1902—Continued.

Table 112—Continued. DIVISION AND STATE.	Census.	Number of com- panies.	Total.	Taxes.	Interest.	Rent of leased lines and terminals.	Charges for sinking fund. <sup>1</sup>	Miscella- neous.
<b>WEST SOUTH CENTRAL:</b>								
Arkansas.....	1912	10	\$474,638	\$91,649	\$374,635	-----	-----	\$8,354
	1907	8	263,537	30,817	232,720	-----	-----	-----
	1902	7	68,071	7,213	60,858	-----	-----	-----
Louisiana.....	1912	13	2,295,075	408,323	1,271,989	\$538,820	\$12,000	63,943
	1907	11	1,890,680	359,837	1,173,857	320,449	-----	36,537
	1902	8	690,380	200,156	483,594	-----	-----	6,630
Oklahoma.....	1912	17	498,584	64,924	398,691	12,719	6,250	16,000
	1907	8	109,230	7,732	86,645	-----	-----	14,853
Texas.....	1912	39	1,871,243	318,551	1,369,589	128	179,749	3,226
	1907	23	932,282	146,669	785,613	-----	-----	-----
	1902	17	199,483	36,919	162,564	-----	-----	-----
<b>MOUNTAIN:</b>								
Montana.....	1912	6	224,729	44,387	116,650	-----	12,490	51,202
	1907	5	120,851	22,519	79,638	-----	-----	18,694
	1902	5	74,633	13,975	60,658	-----	-----	-----
Colorado.....	1912	16	2,106,967	377,718	1,552,279	69,955	54,463	52,552
	1907	11	1,273,024	148,462	1,033,840	-----	-----	90,722
	1902	7	536,005	78,264	464,479	3,262	-----	-----
All other Mountain states.....	1912	18	1,397,370	167,755	799,607	109,357	320,413	238
Idaho, Wyoming, Nevada, and Utah.....	1912	12	1,302,819	156,302	716,509	109,357	320,413	238
New Mexico and Arizona.....	1912	6	94,551	11,453	83,098	-----	-----	-----
All other Mountain states.....	1907	12	517,452	67,323	450,129	-----	-----	-----
	1902	6	176,723	17,523	159,091	-----	-----	109
<b>PACIFIC:</b>								
Washington.....	1912	19	4,033,973	858,974	2,846,702	141,073	174,643	12,581
	1907	14	1,788,314	388,322	1,281,023	117,417	-----	1,552
	1902	8	463,101	78,239	384,862	-----	-----	-----
Oregon.....	1912	6	3,050,248	560,380	2,127,132	-----	-----	362,736
	1907	8	992,748	117,548	875,200	-----	-----	-----
	1902	6	146,519	17,622	128,897	-----	-----	-----
California.....	1912	35	10,696,969	1,487,425	7,480,561	255,416	1,122,285	351,282
	1907	41	6,732,705	896,273	5,189,609	215,831	-----	430,992
	1902	35	2,112,959	496,179	1,617,550	-----	-----	230

<sup>1</sup> Included with "Miscellaneous" in 1907 and 1902.

In all states, with one exception (South Carolina), there is shown an increase in taxes for 1912 over 1907, and in 1907 only one state (Pennsylvania) showed a decrease with respect to 1902, occasioned by a difference in division of the taxes between operating and lessor companies at the two censuses.

Table 113 shows, for geographic divisions and states, the taxes reported in 1912, by class.

The payment of taxes on real and personal property was reported for all states, taxes on capital stock for

33 states, taxes on earnings for 40 states, and miscellaneous taxes for 41 states. In 1907, 26 states, and in 1902, 14 states, imposed a tax on capital stock and bonds. Taxes on earnings were levied in 33 states in 1907 and in 23 in 1902. The East North Central states reported the largest amounts for real and personal property tax and tax on earnings, the New England states the largest amount for tax on capital stock, and the Middle Atlantic states the largest amounts for Federal corporation and miscellaneous taxes.

## STREET AND ELECTRIC RAILWAYS—TAXES: 1912.

Table 113	DIVISION AND STATE.	Total.	On real and personal property.	On capital stock.	On earnings.	Federal corporation tax.	Miscellaneous.
	UNITED STATES.....	\$35,027,965	\$15,658,239	\$3,899,146	\$9,486,792	\$1,016,901	\$4,986,887
	GEOGRAPHIC DIVISIONS:						
	New England.....	4,237,429	1,006,464	1,658,536	827,761	95,169	649,499
	Middle Atlantic.....	11,249,018	2,985,787	1,503,794	3,028,532	424,187	3,306,718
	East North Central.....	9,211,636	4,864,084	424,154	3,385,171	211,730	329,497
	West North Central.....	2,490,045	2,093,401	26,715	243,264	82,324	43,741
	South Atlantic.....	2,353,998	1,049,108	63,789	1,036,975	11,395	131,781
	East South Central.....	1,105,753	750,054	201,313	11,395	25,008	117,983
	West South Central.....	883,447	506,683	2,995	136,926	20,750	216,093
	Mountain.....	689,860	482,068	951	13,440	20,112	73,289
	Pacific.....	2,906,779	1,920,530	16,899	803,328	64,736	101,286
	NEW ENGLAND:						
	Maine.....	120,208	100,731	46	11,893	3,985	3,553
	New Hampshire.....	39,912	39,461			451	
	Vermont.....	19,596	11,000	2,029	6,282	206	79
	Massachusetts.....	3,108,197	689,910	1,131,952	571,615	71,656	643,004
	Rhode Island and Connecticut.....	949,616	165,362	524,509	237,971	18,871	2,803
	MIDDLE ATLANTIC:						
	New York.....	7,735,345	2,370,041	273,363	1,785,353	250,153	3,056,435
	New Jersey.....	1,254,642	489,941	2,022	693,000	28,987	41,792
	Pennsylvania.....	2,255,831	125,805	1,228,409	550,179	145,947	208,491
	EAST NORTH CENTRAL:						
	Ohio.....	2,525,422	1,534,991	91,561	743,907	62,515	92,448
	Indiana.....	536,210	471,517		708	18,290	45,695
	Illinois.....	4,885,069	1,715,491	332,593	2,555,556	101,125	180,304
	Michigan.....	760,270	650,771		85,000	19,220	5,279
	Wisconsin.....	504,665	491,314			10,580	2,771
	WEST NORTH CENTRAL:						
	Minnesota.....	612,291	528,181	21,270	20,141	28,712	13,987
	Iowa.....	209,664	192,151	2,024	4,626	9,326	1,537
	Missouri.....	1,249,643	1,030,044	1,791	161,066	35,901	20,841
	North and South Dakota.....	7,375	7,264			111	
	Nebraska.....	265,235	201,044	1,060	57,293	5,835	
	Kansas.....	145,837	134,717	570	135	3,039	7,376
	SOUTH ATLANTIC:						
	Delaware, Maryland, and District of Columbia.....	1,165,421	244,203	56,568	747,784	27,824	89,042
	Virginia.....	384,277	196,149	3,593	169,801	11,418	3,253
	West Virginia.....	162,645	141,557	1,053	11,144	5,716	3,175
	North Carolina.....	59,479	51,891	740	3,936	1,760	1,162
	South Carolina.....	36,895	21,596		2,626	1,456	17,217
	Georgia.....	447,764	324,396	150	82,810	20,527	19,881
	Florida.....	97,517	69,376	1,685	18,814	3,594	4,048
	EAST SOUTH CENTRAL:						
	Kentucky.....	376,922	120,694	195,216	6,608	9,789	44,615
	Tennessee.....	419,175	360,607	179	477	6,267	51,585
	Alabama.....	276,354	237,430	5,918	4,310	8,333	20,393
	Mississippi.....	33,302	31,263			619	1,420
	WEST SOUTH CENTRAL:						
	Arkansas.....	91,649	70,979	1,836	11,801	3,430	3,603
	Louisiana.....	408,323	171,103	199	63,111	6,877	167,033
	Oklahoma.....	64,924	63,848		422	438	216
	Texas.....	318,551	200,753	960	61,592	10,005	45,241
	MOUNTAIN:						
	Montana.....	44,387	37,892		5,745		750
	Colorado.....	377,718	290,014	374	6,067	12,382	68,881
	All other Mountain states.....	167,755	154,162	577	1,628	7,730	3,658
	PACIFIC:						
	Washington.....	858,974	727,509	11,708	84,567	29,520	5,670
	Oregon.....	580,380	557,001	525	1,529		1,325
	California.....	1,487,425	636,020	4,666	717,232	35,216	94,291

The per cent distribution of taxes, by kind, in 1912 is given in Table 114, for the geographic divisions.

Table 114	PER CENT DISTRIBUTION OF TAXES: 1912 (BASED ON TABLE 113).					
DIVISION.	Total.	On real and personal property.	On capital stock.	On earnings.	Federal corporation tax.	Miscellaneous.
United States.....	100.0	44.7	11.1	27.1	2.9	14.2
New England.....	100.0	23.8	39.1	19.5	2.2	15.3
Middle Atlantic.....	100.0	26.5	13.4	26.9	3.3	29.4
East North Central.....	100.0	52.8	4.6	36.7	2.3	3.5
West North Central.....	100.0	84.1	1.1	9.8	3.3	1.8
South Atlantic.....	100.0	44.6	2.7	44.1	3.1	5.6
East South Central.....	100.0	67.8	18.2	1.0	2.3	10.7
West South Central.....	100.0	57.4	0.3	15.5	2.4	24.5
Mountain.....	100.0	81.7	0.1	2.3	3.5	12.4
Pacific.....	100.0	66.1	0.6	27.5	2.2	3.5

In the New England and Middle Atlantic divisions taxes on real and personal property constituted but one-fourth, approximately, of the total taxes, taxes on capital stock being the largest factor for New England as a whole, while miscellaneous taxes formed the greatest item for the Middle Atlantic division, principally on account of the special franchise taxes of the New York City lines.

In the South Atlantic division the tax on earnings is but a little less in the aggregate than the tax on real and personal property, this being due to conditions in Maryland and the District of Columbia; and in the East North Central division tax on earnings constitutes a little more than a third of the total taxes, on

account of conditions in Ohio and Illinois. Of the \$2,555,556 reported as tax on earnings for Illinois, \$2,529,992 is the share of net receipts (55 per cent) paid the city of Chicago by the Chicago City Railway Co. and the Chicago Railways Co. The large ratio for the Pacific division is due to conditions in California, in which state the tax on earnings formed 48.2 per cent of all taxes.

*Interest.*—The annual payments by street and electric railways to meet interest charges on their funded and floating debt and real-estate mortgages amounted to \$98,025,338 in 1912, an increase of 53.8 per cent over 1907. Earlier tables accompanying the discussion of income account show, for companies as a whole and by groups, the interest charges of operating and lessor companies in their relation to gross income, and in Chapter VI there appears an analysis of the statistics relating to interest on funded and floating debt and mortgages. The following statement shows the interest paid by operating and lessor companies:

CLASS OF COMPANY.	INTEREST.		
	1912	1907	1902
Total—All companies.....	\$113,259,470	\$81,771,266	\$46,462,470
Operating companies.....	98,025,338	63,740,744	38,085,911
Lessor companies.....	15,234,132	18,030,522	8,376,559

Although the interest on bonds of leased companies is guaranteed by the lessor companies, and often paid directly by the latter to their bondholders, the distinction between the two classes of securities with respect to the interest accruing thereon is preserved in the census statistics. By dividing the total interest by the aggregate funded and floating debt and real-estate mortgages, there is given an average rate of 4.3 per cent for 1912, as compared with 4.2 per cent for 1907.

*Rent of leased lines and terminals.*—Payments by operating companies for the use of track owned by nonoperating lessor companies form the greater part of this item, but it also includes a considerable amount paid by operating companies for the use of track leased from other operating companies and track leased from steam roads, as well as rentals paid municipalities for subways and bridge trackage. It does not include, however, track rentals in cases where the owning companies also operate over the tracks. Such use is classed as a trackage right, and the rental is considered an operating expense, and in accordance with the standard system of accounting is charged to "Rent of tracks and terminals" in the group of "General and miscellaneous" accounts of operating expenses. It should be explained that subway rentals paid the municipalities of New York and Boston, reported in 1912 under "Rent of leased lines and terminals," were

classed in 1907 under "Miscellaneous deductions" from income. They aggregated in 1907, \$1,996,821. The transfer of this amount to rent of leased lines and terminals for 1907, though not affecting deductions from income as a whole, gives a total of \$50,019,417 for rent of leased lines and terminals for that year, as compared with \$44,784,521 in 1912.

The total amount paid by operating companies for the rent of leased lines and terminals in 1912 shows a decrease of 6.7 per cent from the amount reported in 1907, or of 10.5 per cent with the above change in classification. Next to interest this item constituted the largest fixed charge. By reference to Table 112 it will be seen that although rentals for leased lines were paid in 1912 in 33 states, \$29,908,785, or 67 per cent of the total, was reported for the Middle Atlantic division, as compared with \$35,106,326, or 73 per cent, in 1907, and that the reduction in rentals in 1912, as compared with 1907, is due to changes in conditions in New York and Illinois, and in a slight degree in Indiana.

*Charges for sinking fund and miscellaneous deductions.*—Charges for sinking fund to the amount of \$6,229,136 were reported in 1912. In 1907 and 1902 they were included under "Miscellaneous deductions" from income and not reported separately. In reporting these minor accounts the practice of the companies lacks uniformity. In general, it appears that depreciation, when accounted for as a deduction from income and not as a charge to maintenance, is included under "Sinking funds," but the returns do not permit a statistical presentation of depreciation accounts. Some of the items reported under "Miscellaneous deductions" in 1912 are amortization of debt, discount, and expense; miscellaneous rents; taxes in litigation; and deductions from income from outside sources. For comparative purposes it is necessary to combine sinking-fund charges and miscellaneous deductions. They aggregated \$13,285,584 in 1912, as compared with \$6,575,774 in 1907, an increase of 102 per cent. If the subway rentals included under "Miscellaneous deductions" in 1907, above cited, are transferred to rent of leased lines, the increase is somewhat larger. Of the total of \$6,575,774 reported under the heading of "Miscellaneous deductions" in 1907, \$2,397,250 represented charges for depreciation, specifically reported as such, or credits to depreciation and sinking funds.

*Deductions from income for groups of companies.*—Table 115 presents the deductions from income for companies classified according to income from railway operations, at the censuses of 1912, 1907, and 1902; Table 116, percentages showing distribution of totals and accounts, based upon Table 115; and Table 117, statistics similar to those in Table 115, for companies classified as "Elevated and subway" and "Surface" in 1912.



Table 115

ACCOUNTS, BY CLASS.	DEDUCTIONS FROM INCOME, BY ACCOUNTS, FOR COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS: CLASS A, \$1,000,000 AND OVER; CLASS B, \$250,000 BUT LESS THAN \$1,000,000; CLASS C, LESS THAN \$250,000.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Number of companies.....	975	939	799	22.0	3.8	17.5
Class A.....	91	76	44	106.8	19.7	72.7
Class B.....	155	130	81	91.4	19.2	60.5
Class C.....	729	733	674	8.2	0.5	8.8
Deductions from income.....	\$191,123,408	\$138,094,716	\$77,595,053	146.3	38.4	78.0
Class A.....	148,040,699	102,004,702	56,819,948	161.6	45.7	79.5
Class B.....	25,425,531	20,911,111	10,936,393	132.5	21.6	91.2
Class C.....	17,057,178	15,178,903	9,838,712	73.4	12.4	54.3
Taxes.....	35,027,965	19,755,602	13,078,899	167.8	77.3	51.0
Class A.....	28,702,175	15,524,362	10,326,341	178.0	84.8	50.3
Class B.....	4,335,021	2,479,106	1,499,191	162.5	58.7	65.4
Class C.....	2,390,769	1,752,134	1,253,367	90.7	36.5	39.8
Interest on funded floating debt and mortgages.....	98,025,338	63,740,744	38,085,911	157.4	53.8	67.4
Class A.....	68,147,448	35,648,870	21,796,528	212.7	91.2	63.6
Class B.....	16,712,732	15,502,292	8,219,411	103.3	10.8	88.6
Class C.....	13,165,158	12,589,582	8,069,972	63.1	4.6	56.0
Rent of leased lines and terminals.....	44,784,521	48,022,596	25,518,225	75.1	-6.7	88.2
Class A.....	41,334,414	45,188,356	24,296,050	70.1	-8.5	86.0
Class B.....	2,945,111	2,302,537	922,925	219.1	27.9	149.5
Class C.....	504,996	531,703	299,250	68.8	5.0	77.7
Charges for sinking fund.....	6,229,136	( <sup>2</sup> )	( <sup>2</sup> )	-----	-----	-----
Class A.....	5,043,599	-----	-----	-----	-----	-----
Class B.....	594,446	-----	-----	-----	-----	-----
Class C.....	221,627	-----	-----	-----	-----	-----
Miscellaneous deductions.....	7,056,448	6,575,774	912,018	678.7	7.8	621.0
Class A.....	5,043,599	5,643,114	401,029	1157.7	-10.6	1307.2
Class B.....	1,238,221	627,176	294,866	319.9	97.4	112.7
Class C.....	774,628	305,484	216,123	258.4	153.6	41.4

<sup>1</sup> A minus sign (-) denotes decrease.<sup>2</sup> Figures not available.

Table 116

ACCOUNTS, BY CLASS.	PER CENT DISTRIBUTION OF DEDUCTIONS FROM INCOME, BY ACCOUNTS, FOR COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS (BASED ON TABLE 115).					
	Per cent of total.			Per cent of total deductions from income.		
	1912	1907	1902	1912	1907	1902
Number of companies.....	100.0	100.0	100.0	-----	-----	-----
Class A.....	9.3	8.1	5.5	-----	-----	-----
Class B.....	15.9	13.8	10.1	-----	-----	-----
Class C.....	74.8	78.1	84.4	-----	-----	-----
Deductions from income.....	100.0	100.0	100.0	100.0	100.0	100.0
Class A.....	77.8	73.9	73.2	100.0	100.0	100.0
Class B.....	13.3	15.1	14.1	100.0	100.0	100.0
Class C.....	8.9	11.0	12.7	100.0	100.0	100.0
Taxes.....	100.0	100.0	100.0	18.3	14.3	16.9
Class A.....	81.9	78.6	79.0	19.3	15.2	18.2
Class B.....	11.2	12.5	11.5	15.5	11.9	13.7
Class C.....	6.8	8.9	9.6	14.0	11.5	12.7
Interest on funded floating debt and mortgages.....	100.0	100.0	100.0	51.3	46.2	49.1
Class A.....	69.5	55.9	57.2	45.8	34.9	38.4
Class B.....	17.0	24.3	21.6	65.7	74.1	75.2
Class C.....	13.4	19.8	21.2	77.2	82.9	82.0
Rent of leased lines and terminals.....	100.0	100.0	100.0	23.4	34.8	32.9
Class A.....	92.3	94.1	95.2	27.8	44.3	42.8
Class B.....	6.6	4.8	3.6	11.6	11.0	8.4
Class C.....	1.1	1.1	1.2	2.9	3.5	3.0
Charges for sinking fund.....	100.0	-----	-----	3.3	-----	-----
Class A.....	86.9	-----	-----	3.6	-----	-----
Class B.....	9.5	-----	-----	2.3	-----	-----
Class C.....	3.6	-----	-----	1.3	-----	-----
Miscellaneous deductions.....	100.0	100.0	100.0	3.7	4.8	1.2
Class A.....	71.5	85.9	44.0	3.4	5.5	0.7
Class B.....	17.5	9.5	32.3	4.9	3.0	2.7
Class C.....	11.0	4.6	23.7	4.5	2.0	2.2

Table 117

ACCOUNT.	DEDUCTIONS FROM INCOME, BY ACCOUNTS, FOR COMPANIES CLASSIFIED AS "ELEVATED AND SUBWAY" AND "SURFACE:" 1912.				
	Total.	Elevated and subway.	Surface.	Per cent of deductions from income.	
				Elevated and subway.	Surface.
Number of companies.....	975	7	968	-----	-----
Deductions from income.....	\$191,123,408	\$22,732,065	\$168,391,343	100.0	100.0
Taxes.....	35,027,965	3,500,657	31,527,308	15.4	18.7
Interest on funded and floating debt and mortgages.....	98,025,338	9,654,473	88,370,865	42.5	52.5
Rent of leased lines and terminals.....	44,784,521	8,795,655	35,988,866	38.7	21.4
Charges for sinking fund	6,229,136	329,692	5,899,444	1.5	3.5
Miscellaneous deductions.....	7,056,448	451,588	6,604,860	2.0	3.9

## GENERAL RESULTS OF OPERATION.

The standards or units employed for gauging operative results are the mile of track, the car-mile, and revenue passenger. The averages obtained by applying these standards to the operating revenues, operating expenses, and operating or net earnings for all classes of companies operating under varying conditions furnish a much better measure of the general trend of operative conditions than is provided by large aggregates alone. A mile of track, as a unit of measure, expresses the foundation upon which all railway business rests and is perhaps the best unit of comparison for all general statistics. The car-mile unit is employed by all street and electric railway companies, and though the car-hour has certain advantages over the car-mile, it is not in general use. The revenue-passenger unit is used by all roads doing a passenger business. It must be borne in mind that the car-mile unit is complex and involves capacity as well as distance. Hence the unit is not fixed, since, while the distance factor is constant, the capacity of a car is varying. Indeed, the variation of this factor is one of the changes that car-mile statistics are designed to show. Capacity depends upon the size and type of car and to a certain extent upon speed.

Similarly, the revenue-passenger unit is influenced in a number of ways. A change in the policy of a railway in granting free transfers may mean a change in the number of revenue passengers carried without a change in other traffic statistics. Again, the revenue-passenger unit assumes a uniform average length of ride for all companies. This assumption is only roughly true for strictly urban traffic, while the development of suburban and interurban lines has introduced a large and growing number of long-trip passengers, and in some cases long-trip passengers pay their fare by "zones" and in some cases by the trip. Where the zone system is used, the passenger as a unit is not far different from the passenger of the urban statistics, though undoubtedly representing a dis-

tance traveled above the average for urban passengers; but to the extent that interurban passengers are counted by the trip the resultant averages are increased beyond what they would be if based solely upon urban traffic.

Table 118 presents certain operating averages per mile of track, per car-mile, and per revenue passenger for all companies and for companies classified according to income from railway operations, for 1912, 1907, and 1902.

**Table 118**

GENERAL RESULTS OF OPERATIONS OF ALL COMPANIES AND OF COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS.

UNIT.	Total—All companies.			Class A. \$1,000,000 or over.			Class B. \$250,000 but less than \$1,000,000.			Class C. Less than \$250,000.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902	1912	1907	1902
Number of companies.....	975	939	799	91	76	44	155	130	81	729	733	674
Ratio of operating expenses to operating revenues (per cent).....	58.7	60.1	57.5	56.7	58.4	54.8	61.7	61.9	58.8	68.3	67.4	67.7
Per mile of track:												
Operating revenues.....	\$13,820	\$12,268	\$11,154	\$19,844	\$19,287	\$19,946	\$8,937	\$8,009	\$8,265	\$5,784	\$5,251	\$4,464
Operating revenues exclusive of income from sale of current.....	12,931	11,678	10,807	19,011	18,798	19,691	7,929	7,415	7,907	4,890	4,516	4,037
Operating expenses.....	8,107	7,373	6,412	11,252	11,256	10,921	5,517	4,956	4,857	3,949	3,539	3,021
Net operating revenue.....	5,713	4,895	4,742	8,592	8,032	9,025	3,420	3,053	3,408	1,835	1,712	1,443
Per car-mile:												
Operating revenues.....	Cents. 29.53	Cents. 25.97	Cents. 21.87	Cents. 29.49	Cents. 26.25	Cents. 22.92	Cents. 30.63	Cents. 25.71	Cents. 21.21	Cents. 28.32	Cents. 24.84	Cents. 18.85
Operating revenues exclusive of income from sale of current.....	27.63	24.72	21.19	28.25	25.58	22.63	27.18	23.80	20.29	23.94	21.36	17.04
Operating expenses.....	17.32	15.61	12.57	16.72	15.32	12.55	18.91	15.91	12.46	19.33	16.74	12.75
Conducting transportation.....	9.87	8.76	7.43	9.62	8.84	7.62	10.56	9.01	7.31	10.71	9.47	7.56
All other.....	7.45	6.84	5.15	7.10	6.48	4.93	8.35	6.90	5.15	8.62	7.27	5.19
Net operating revenue.....	12.21	10.36	9.30	12.77	10.93	10.37	11.72	9.80	8.75	8.99	8.10	6.10
Per revenue passenger:												
Operating revenues.....	5.95	5.63	5.23	5.54	5.28	5.00	7.51	6.53	5.57	7.68	6.99	6.08
Passenger revenue.....	5.27	5.15	4.94	5.08	4.99	4.84	6.10	5.69	5.16	5.87	5.61	5.24
All other.....	0.68	0.49	0.29	0.46	0.30	0.16	1.41	0.84	0.42	1.80	1.38	0.84
Operating expenses.....	3.49	3.39	3.01	3.14	3.08	2.74	4.64	4.04	3.28	5.24	4.71	4.11
Net operating revenue.....	2.46	2.25	2.23	2.40	2.20	2.26	2.87	2.49	2.30	2.44	2.28	1.96

A disturbing factor in all comparisons based upon total income or total expenses is the inclusion of income and expenses incident to the operation of electric light and power plants in conjunction with railways. If the proportions for the income and expenses incident to light and power business with respect to total income and expense remained the same, the averages for the different years would be on an equal footing, and hence would indicate the changes. But this is not the case, for the income from the sale of current formed 6.4 per cent of the total operating revenues reported for 1912, as compared with 4.8 per cent in 1907 and 3.1 per

cent in 1902. Though these percentages are small, the amounts involved are large, and their exclusion perceptibly affects the averages. Thus the exclusion of income from sale of current results in reducing the revenue per mile of track by \$889 in 1912, as compared with \$590 in 1907 and \$347 in 1902; and the revenue per car-mile by 1.9 cents in 1912, as compared with 1.25 cents in 1907 and seven-tenths of a cent in 1902.

Table 119 presents similar averages for companies classified as without and with commercial lighting and for companies classified as "Elevated and subway" and "Surface."

**Table 119**

GENERAL RESULTS OF OPERATIONS.

UNIT.	Companies without and with commercial lighting.						Companies classified as "Elevated and subway" and "Surface."			
	Without commercial lighting.			With commercial lighting.			Elevated and subway.		Surface.	
	1912	1907	1902	1912	1907	1902	1912	1907	1912	1907
Number of companies.....	760	709	630	169	175	112	7	6	922	933
Ratio of operating expenses to operating revenues (per cent).....	59.2	60.0	57.4	56.0	60.3	58.1	44.1	44.7	59.9	61.5
Per mile of track:										
Operating revenues.....	\$14,487	\$13,178	\$11,794	\$11,840	\$10,022	\$8,978	\$100,884	\$80,727	\$12,708	\$11,414
Operating expenses.....	8,582	7,910	6,772	6,632	6,039	5,217	45,601	36,054	7,628	7,014
Net operating revenue.....	5,905	5,268	5,022	5,208	3,983	3,761	55,283	44,673	5,080	4,400
Per car-mile:										
Operating revenues.....	Cents. 28.05	Cents. 25.19	Cents. 21.57	Cents. 38.47	Cents. 30.85	Cents. 25.97	Cents. 23.80	Cents. 23.58	Cents. 30.27	Cents. 26.20
Operating expenses.....	16.62	15.12	12.39	21.55	18.59	15.09	10.76	10.53	18.17	16.10
Conducting transportation.....	9.60	(1)	(1)	11.51	(1)	(1)	6.62	(1)	10.29	(1)
All other.....	7.02	(1)	(1)	10.04	(1)	(1)	4.14	(1)	7.88	(1)
Net operating revenue.....	11.43	10.07	9.18	16.92	12.26	10.88	13.04	13.05	12.10	10.10
Per revenue passenger:										
Operating revenues.....	5.54	5.36	5.08	8.76	7.56	7.22	5.27	5.33	6.02	5.66
Passenger revenue.....	5.21	5.10	4.93	5.64	5.42	4.93	5.08	4.97	5.28	5.17
All other.....	0.33	0.25	0.15	3.12	2.13	2.29	0.19	0.36	0.74	0.50
Operating expenses.....	3.28	3.21	2.92	4.90	4.55	4.20	2.38	2.38	3.62	3.48
Net operating revenue.....	2.26	2.14	2.16	3.85	3.00	3.03	2.89	2.95	2.41	2.18

<sup>1</sup> Figures not available.

*Earnings per mile of track.*—The averages based on totals which exclude earnings from the sale of current are undoubtedly the correct ones by which to gauge railway operations. On this basis the operating earnings per mile of track show a substantial increase for 1912 over 1907 and for 1907 over 1902.

Table 120 shows the increases and decreases, for the census periods 1907–1912 and 1902–1907, in operating revenues, expenses, and net revenues per mile of track for all companies and for classes A, B, and C.

CLASS AND ACCOUNT.	OPERATING REVENUES, OPERATING EXPENSES, AND NET REVENUE PER MILE OF TRACK.				
	1912	1907	1902	1902–1912	
				Increase.	Decrease.
Total—All companies:					
Operating revenues.....	\$13,820	\$12,268	\$11,154	\$2,666	.....
Operating revenues exclusive of income from sale of current.....	12,931	11,678	10,807	2,124	.....
Operating expenses.....	8,107	7,373	6,412	1,695	.....
Net operating revenue.....	5,713	4,895	4,742	971	.....
Classified according to income from railway operations:					
Class A—					
Operating revenues.....	19,844	19,287	19,946	.....	\$102
Operating revenues exclusive of income from sale of current.....	19,011	18,798	19,691	.....	680
Operating expenses.....	11,252	11,256	10,921	331	.....
Net operating revenue.....	8,592	8,032	9,025	.....	433
Class B—					
Operating revenues.....	8,937	8,009	8,265	672	.....
Operating revenues exclusive of income from sale of current.....	7,929	7,415	7,907	22	.....
Operating expenses.....	5,517	4,956	4,557	660	.....
Net operating revenue.....	3,420	3,053	3,408	12	.....
Class C—					
Operating revenues.....	5,784	5,251	4,464	1,320	.....
Operating revenues exclusive of income from sale of current.....	4,890	4,516	4,037	853	.....
Operating expenses.....	3,949	3,539	3,021	928	.....
Net operating revenue.....	1,835	1,712	1,443	392	.....

The decrease for the decade in revenue per mile of track shown for class A is accounted for by the fact that the proportionate increase in miles of track is greater than that in earnings exclusive of receipts from sale of current.

The averages for classes A and B are affected by the inclusion in class A of six and in class B of one of the seven elevated and subway companies (1912) whose average earnings are shown in Table 119. Since the earnings and expenses per mile of track for these companies are large, they necessarily increase materially the averages for the two classes named, and particularly those for class A.

Freight and express business forms a growing department of activity for street and electric railways, and this service has added to operating earnings; and although the ratio between expenses incident to freight and express traffic and the income derived therefrom can not be determined, it should be remembered in considering averages.

Table 121 shows the freight and express revenues per mile of track, by groups of companies.

There were 540 companies in 1912, or 55.4 per cent of the total number, that reported earnings from freight, baggage, express, or milk business, as compared with 454, or 48 per cent of the total, in 1907, and 265, or 32.4 per cent, in 1902. It was impracticable, however, to ascertain the number of miles of track over

which freight or express matter was carried, and therefore the total trackage has been used in all cases as the divisor in computing the average earnings from this business.

Table 121	FREIGHT AND EXPRESS REVENUES PER MILE OF TRACK.					
	1912	1907	1902	Increase.		
				1902–1912	1907–1912	1902–1907
All companies.....	\$337	\$199	\$65	\$272	\$138	\$134
Class A.....	320	159	37	283	161	122
Class B.....	424	282	81	343	142	201
Class C.....	291	192	83	208	99	109
Elevated and subway.....	80	75	(1)	.....	5	.....
Surface.....	341	201	(1)	.....	140	.....

<sup>1</sup> Figures not available.

Table 122 shows the number of companies doing freight, mail, express, etc., business, by geographic divisions, in 1912.

Table 122 <sup>1</sup>	DIVISION.	NUMBER OF COMPANIES DOING FREIGHT, MAIL, EXPRESS, ETC., BUSINESS: 1912.						
		Number of companies reporting—				Per cent of total number.		
		Either freight, baggage, express, or milk revenue.	Freight revenue.	Baggage, express, or milk revenue.	Mail revenue.	Either freight, baggage, express, or milk revenue.	Mail revenue.	
	United States...	975	540	406	382	371	55.4	38.0
	New England.....	91	62	43	38	59	68.1	64.8
	Middle Atlantic.....	246	148	102	100	93	60.1	37.8
	East North Central.....	222	141	114	122	90	63.5	40.5
	West North Central.....	85	43	31	31	31	50.6	36.4
	South Atlantic.....	107	52	41	33	37	48.6	34.6
	East South Central.....	45	17	14	7	14	37.8	81.1
	West South Central.....	79	19	11	11	12	24.1	15.2
	Mountain.....	40	19	16	12	8	47.5	20.0
	Pacific.....	60	39	34	28	27	65.0	35.0

In the New England division the largest proportion of the companies reported revenue from either freight, baggage, express, or milk business, namely, 68.1 per cent, while the West South Central division shows the lowest proportion, 24.1 per cent. With respect to the carrying of mails, 371 companies, or 38 per cent of the total number, reported mail revenue in 1912, the highest proportion showing for the New England division, 64.8 per cent, and the lowest for the West South Central, 15.2 per cent.

*Income from railway operations in state.*—The operating revenues credited to the states, as given in Table 161 (p. 308), as well as all general state financial statistics, are based upon the returns of the companies credited to the respective states; but, as elsewhere explained, in some cases the statistics for a state include those pertaining to traffic outside of the state, while in other cases they exclude data for traffic within the state reported by a company of an adjoining state. It is possible to determine with approximate accuracy the income from railway operations chargeable to the trackage operated within a state by distributing for each interstate company the income

from railway operations on a mile-of-track basis and assigning to each state a share of the income from railway operations corresponding to the proportion of its total trackage operated by the company in that state. There is thus secured a figure for the income from railway operations within the confines of a state commensurate with the miles of track operated therein, whether by companies within or without the state, and, as a result, the average income from railway

operations per mile of track for the actual trackage of each state. Table 123 shows these statistics by states: First, the miles of track operated by the companies located in the respective states, the income from railway operations, and the average per mile of track; and, second, the miles of track operated within the respective states, the income from the operation thereof, and the average income per mile of track.

## STREET AND ELECTRIC RAILWAYS—MILES OF TRACK AND INCOME FROM OPERATIONS.

Table 123

STATE.	Miles of track operated by companies in state.	INCOME FROM RAILWAY OPERATIONS OF COMPANIES LOCATED IN STATE.		Miles of track operated in state. <sup>1</sup>	INCOME FROM RAILWAY OPERATIONS IN STATE.	
		Amount.	Average per mile of track.		Amount.	Average per mile of track.
<b>NEW ENGLAND:</b>						
Maine.....	536.38	\$2,671,870	\$4,981	530.49	\$2,648,810	\$4,993
New Hampshire.....	246.26	1,231,926	5,003	268.15	1,412,609	5,268
Vermont.....	102.85	484,663	4,712	120.83	597,071	4,941
Massachusetts.....	3,010.48	35,744,786	11,873	2,950.96	35,250,375	11,945
Rhode Island.....	395.71			435.37		
Connecticut.....	1,002.87	13,996,897	10,008	993.22	14,278,954	9,995
<b>MIDDLE ATLANTIC:</b>						
New York.....	4,605.44	112,301,108	24,384	4,485.81	109,298,347	24,365
New Jersey.....	1,319.85	17,747,541	13,447	1,308.97	19,772,211	15,105
Pennsylvania.....	4,117.74	53,593,671	13,015	4,269.53	54,764,712	12,827
<b>EAST NORTH CENTRAL:</b>						
Ohio.....	4,060.12	35,120,522	8,631	3,999.22	34,830,349	8,709
Indiana.....	2,301.34	14,052,261	6,106	2,323.38	14,156,071	6,093
Illinois.....	3,125.84	51,297,589	16,411	3,185.73	51,830,711	16,270
Michigan.....	1,507.26	17,016,992	11,290	1,526.25	17,040,685	11,165
Wisconsin.....	806.13	7,119,748	8,832	849.11	7,540,125	8,886
<b>WEST NORTH CENTRAL:</b>						
Minnesota.....	555.18	9,477,206	17,071	538.48	9,212,493	17,108
Iowa.....	803.87	5,959,210	7,413	783.87	5,874,514	7,494
Missouri.....	996.00	20,393,924	20,476	959.01	19,180,241	20,000
North Dakota.....	26.02	234,383	4,923	19.18	196,089	4,810
South Dakota.....	21.59			21.59		
Nebraska.....	243.80	3,334,753	13,678	214.46	2,831,631	13,204
Kansas.....	452.16	2,595,344	5,740	493.91	3,912,446	7,921
<b>SOUTH ATLANTIC:</b>						
Delaware.....	90.37			99.37		
District of Columbia.....	214.23	15,775,248	15,821	188.46	15,819,760	15,701
Maryland.....	692.51			719.74		
Virginia.....	561.86	4,742,483	8,441	561.49	4,726,041	8,417
West Virginia.....	404.98	3,181,763	7,857	330.18	2,407,664	7,292
North Carolina.....	190.26	1,266,911	6,659	190.26	1,266,911	6,659
South Carolina.....	202.60	963,857	4,757	228.08	1,121,960	4,919
Georgia.....	440.63	4,490,138	10,190	417.33	4,360,277	10,448
Florida.....	164.84	1,391,590	8,442	164.84	1,391,590	8,442
<b>EAST SOUTH CENTRAL:</b>						
Kentucky.....	493.21	5,740,328	11,639	502.38	5,822,096	11,589
Tennessee.....	370.28	4,729,510	12,773	360.93	4,670,391	12,940
Alabama.....	306.63	3,107,694	10,135	308.80	3,124,692	10,119
Mississippi.....	117.14	621,596	5,306	118.57	624,130	5,284
<b>WEST SOUTH CENTRAL:</b>						
Arkansas.....	122.92	1,194,265	9,716	113.72	1,129,166	9,929
Louisiana.....	285.10	4,738,796	16,622	285.10	4,738,796	16,622
Oklahoma.....	251.56	1,302,418	5,177	251.56	1,302,418	5,177
Texas.....	716.65	7,694,564	10,737	721.42	7,708,820	10,686
<b>MOUNTAIN:</b>						
Montana.....	99.22	802,441	8,087	99.22	802,441	8,087
Colorado.....	467.97	4,617,746	9,868	467.97	4,617,746	9,868
New Mexico.....	10.60	283,975	4,996	10.60	283,975	4,996
Arizona.....	46.24			46.24		
Idaho.....	88.93			129.13		
Wyoming.....	22.91	2,587,356	6,750	22.91	2,800,014	6,612
Nevada.....	11.27			11.27		
Utah.....	260.18			260.18		
<b>PACIFIC:</b>						
Washington.....	1,035.92	8,085,516	7,805	991.17	7,849,344	7,919
Oregon.....	544.64	5,197,688	9,543	549.19	5,221,202	9,507
California.....	2,605.28	33,294,496	12,780	2,605.28	33,294,496	12,780

<sup>1</sup> Excluding track located outside of state operated by companies in state and including track in state operated by outside companies.

The miles of outside trackage operated by companies within the state, and the miles of inside trackage operated by companies without the state, are shown in detail, by states, in Table 29 (p. 204). In the majority of cases the difference between the average based upon miles of track operated by companies

in the state and the average based upon the actual miles of track within the state is not marked. New York is not materially affected, although there were 133.12 miles of track outside of the state in Connecticut, New Jersey, Pennsylvania, and Canada operated by companies in the state, and but 13.49 miles of

track in the state operated by outside companies (Pennsylvania). For New Jersey, however, the average per mile of track is increased from \$13,447 to \$15,105, largely on account of the heavy traffic in and out of New York City, and the average for Pennsylvania is decreased from \$13,015 to \$12,827. Kansas shows an increase from \$5,740 to \$7,921, chiefly on account of traffic tributary to Kansas City, Mo.

The largest average income per mile of track from railway operations is, of course, found in New York City. The Interborough Rapid Transit, the Hudson and Manhattan, and the Brooklyn Heights Railroad Co., operating in the aggregate 494.42 miles of track, averaged \$115,552 per mile. The averages for the Philadelphia Rapid Transit, the Boston Elevated, the Chicago City Railways Co., and the Chicago Railways Co. ranged from \$31,000 to \$35,000 per mile of track, the four roads operating in the aggregate 1,980.08 miles of track, with an average income per mile from railway operations of \$33,752.

*Earnings per car-mile.*—Table 124 shows the operating revenues, operating expenses, and net revenue per car-mile for 1912, 1907, and 1902, for all companies and for classes A, B, and C, and the increase during the five-year periods.

CLASS AND ACCOUNT.	OPERATING REVENUES, OPERATING EXPENSES, AND NET REVENUE PER CAR-MILE.					
	1912	1907	1902	Increase.		
				1902-1912	1907-1912	1902-1907
All companies:	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
Operating revenues.....	29.33	25.97	21.87	7.66	3.56	4.10
Operating revenues exclusive of income from sale of current.....	27.63	24.72	21.19	6.44	2.91	3.53
Operating expenses.....	17.32	15.61	12.57	4.75	1.71	3.04
Net operating revenue.....	12.21	10.36	9.30	2.91	1.85	1.06
Classified according to income from railway operations:						
Class A—						
Operating revenues.....	29.49	26.25	22.92	6.57	3.24	3.33
Operating revenues exclusive of income from sale of current....	28.25	25.58	22.03	5.62	2.67	2.95
Operating expenses.....	16.72	15.32	12.55	4.17	1.40	2.77
Net operating revenue.....	12.77	10.93	10.37	2.40	1.84	0.56
Class B—						
Operating revenues.....	30.03	25.71	21.21	9.42	4.92	4.50
Operating revenues exclusive of income from sale of current....	27.18	23.80	20.29	6.89	3.38	3.51
Operating expenses.....	18.91	15.91	12.46	6.45	3.00	3.45
Net operating revenue.....	11.72	9.80	8.75	2.97	1.92	1.05
Class C—						
Operating revenues.....	28.32	24.84	18.85	9.47	3.48	5.99
Operating revenues exclusive of income from sale of current....	23.94	21.36	17.04	6.90	2.58	4.32
Operating expenses.....	19.33	16.74	12.75	6.58	2.59	3.99
Net operating revenue.....	8.99	8.10	6.10	2.89	0.89	2.00

It is noticeable that every average based on the car-mile as a standard shows an increase for 1912 over 1907 and for 1907 as compared with 1902. The increase is nearly uniform for all classes, although for the decade 1902-1912 the increments for operating revenues, operating revenues exclusive of sale of current, and operating expenses are highest for class C and lowest for class A. With respect to the increase in net revenue per car-mile, the gain during the decade was 2.97 cents for class B, as compared with 2.89 cents for class C and 2.4 cents for class A.

*Earnings per passenger.*<sup>1</sup>—The average earnings per revenue passenger for 1912 were slightly in excess of those for 1907, and in like manner the earnings for 1907 exceeded those for 1902. Urban traffic is the predominating factor, and the averages are influenced largely by the almost universal 5-cent fare for urban passengers. Variations therefrom are due to conditions heretofore described.

Table 125 shows the average operating revenue and expense per revenue passenger for 1912, 1907, and 1902, for all companies, for classes A, B, and C, and for elevated and subway lines.

CLASS AND ACCOUNT.	AVERAGE OPERATING REVENUES, OPERATING EXPENSES, AND NET OPERATING REVENUE PER REVENUE PASSENGER.					
	1912	1907	1902	Increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
All companies:	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
Operating revenues.....	5.95	5.63	5.23	0.72	0.32	0.40
Passenger.....	5.27	5.15	4.94	0.33	0.12	0.21
All other.....	0.68	0.49	0.29	0.39	0.19	0.20
Operating expenses.....	3.49	3.39	3.01	0.48	0.10	0.38
Net operating revenue.....	2.46	2.25	2.23	0.22	0.21	0.02
Class A—						
Operating revenues.....	5.54	5.28	5.00	0.54	0.26	0.28
Passenger.....	5.08	4.99	4.84	0.24	0.09	0.15
All other.....	0.46	0.30	0.16	0.30	0.16	0.14
Operating expenses.....	3.14	3.08	2.74	0.40	0.06	0.34
Net operating revenue.....	2.40	2.20	2.26	0.14	0.20	-0.06
Class B—						
Operating revenues.....	7.51	6.53	5.57	1.94	0.98	0.96
Passenger.....	6.10	5.69	5.16	0.94	0.41	0.53
All other.....	1.41	0.84	0.42	0.99	0.57	0.42
Operating expenses.....	4.64	4.04	3.28	1.36	0.60	0.76
Net operating revenue.....	2.87	2.49	2.30	0.57	0.38	0.19
Class C—						
Operating revenues.....	7.68	6.99	6.08	1.60	0.69	0.91
Passenger.....	5.87	5.61	5.24	0.63	0.26	0.37
All other.....	1.80	1.38	0.84	0.96	0.42	0.54
Operating expenses.....	5.24	4.71	4.11	1.13	0.53	0.60
Net operating revenue.....	2.44	2.28	1.96	0.48	0.16	0.32
Elevated and subway—						
Operating revenues.....	5.27	5.33	(?)	.....	-0.06	.....
Passenger.....	5.08	4.97	(?)	.....	0.11	.....
All other.....	0.19	0.36	(?)	.....	-0.17	.....
Operating expenses.....	2.38	2.33	(?)	.....	.....	.....
Net operating revenue.....	2.89	2.95	(?)	.....	-0.06	.....

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

The effect of long rides on the statistics shows to a slight extent in the average for companies of class B, which class includes many of the interurban lines, while the large city systems are in class A. The elevated and subway group, for which the average passenger revenue was 5.08 cents for 1912, as compared with 4.97 cents in 1907, is purely urban in character.

The statistics indicate an increase in operating expense per passenger for all classes of roads, with the exception of the small elevated and subway group. It is generally recognized that in most cities the length of haul per passenger has increased steadily with the expansion of area served. The area within which a single fare applies has expanded, resulting in a demand for increased service facilities at the same price, and manifestly there is a point beyond which this expansion can not go without a readjustment of rates.

In the case of roads doing an urban railway business, an analysis of their revenues and disposition of in-

<sup>1</sup> See "Passenger traffic and fares," p. 414.

come on a revenue passenger basis may throw some light upon general conditions.

Table 126 shows, by states, the average gross income and the distribution of the income per revenue passenger, for companies operating city and suburban

trackage only and not engaged in the sale of electric current. These form a group of companies engaged essentially in urban traffic, which, as a rule, charge a single unit fare or count passengers by the zone system.

Table 126

CLASS AND STATE.	OPERATING COMPANIES—AVERAGE INCOME, EXPENSES, NET INCOME, AND DIVIDENDS PER REVENUE PASSENGER: 1912.										DIVIDEND RATE (PER CENT).		
	Number of companies.	Number of revenue passengers.	Gross income.	Expenses.			Net income.	Dividends.	Surplus.	Dividends in excess of net income.	Computed on total outstanding capital stock of all companies exclusive of treasury stock.	Companies paying dividends.	
				Total.	Operating expenses.	Deductions from income, taxes and fixed charges.						Number.	Computed on total outstanding capital stock exclusive of treasury stock.
All companies.....	975	9,545,554,667	Cents. 6.14	Cents. 5.49	Cents. 3.49	Cents. 2.00	Cents. 0.65	Cents. 0.54	Cents. 0.09	.....	2.68	292	4.85
All companies without commercial lighting (class X).....	760	8,341,549,514	5.72	5.17	3.28	1.89	0.54	0.47	0.07	.....	2.66	220	5.13
Companies operating city and suburban trackage only, and without commercial lighting (class X)—selected states:													
California.....	20	370,368,211	5.10	4.63	3.07	1.56	0.47	0.30	0.17	.....	1.37	5	1.70
Illinois.....	29	832,514,391	5.27	4.80	2.73	2.07	0.47	0.52	.....	0.05	5.11	12	6.18
Kansas.....	6	19,644,644	5.06	3.90	2.67	1.23	1.16	0.02	1.14	.....	0.20	1	2.67
Kentucky.....	7	93,727,509	5.39	4.32	3.10	1.22	1.07	1.09	.....	0.02	8.37	3	8.74
Massachusetts.....	26	428,907,422	5.30	4.97	3.56	1.41	0.33	0.45	.....	0.12	5.72	16	5.96
Minnesota.....	7	185,606,061	5.07	4.05	3.06	0.99	1.02	0.90	0.12	.....	6.60	3	6.69
Missouri.....	8	265,966,645	5.05	4.58	3.20	1.38	0.47	0.04	0.43	.....	0.22	1	2.67
New Jersey.....	13	318,015,275	5.07	4.89	2.88	2.01	0.18	0.19	.....	0.01	1.50	2	1.60
New York.....	59	1,656,849,982	5.40	4.81	2.83	1.93	0.59	0.52	0.07	.....	6.06	11	9.87
Ohio.....	14	357,060,894	4.25	3.49	2.56	0.93	0.76	0.59	0.17	.....	5.01	10	5.09
Pennsylvania.....	54	578,779,510	5.22	5.07	2.76	2.31	0.15	0.11	0.04	.....	1.09	18	4.23
Texas.....	22	84,096,967	5.04	4.51	3.45	1.06	0.53	0.22	0.31	.....	1.99	3	3.91
Virginia.....	7	9,356,894	6.87	7.42	5.75	1.67	0.55	0.15	.....	<sup>2</sup> 0.70	0.42	1	3.50
Wisconsin.....	10	105,995,804	4.45	3.72	2.32	1.40	0.73	0.77	.....	0.04	7.02	4	7.24

<sup>1</sup> Deficit.

<sup>2</sup> Deficit plus dividends.

Of the 282 companies which operated city and suburban trackage only and which did not do commercial lighting, 90 paid dividends and 192 did not report the payment of dividends. In the case of seven states the dividend rate computed on the capital stock of the companies paying dividends was less than 5 per cent, these seven states representing 130 companies and 31 dividend-paying companies.

The dividends paid exceeded the net income for the year in the case of six of these states, and in two of the remaining states the surplus was less than one-tenth of a cent per revenue passenger.

*Operating ratio.*—Operating ratio statistics have been heretofore presented in connection with different sections of this report, but are here assembled for convenience of reference. A comparison of the ratio of operating expenses to operating revenues for the different groups of companies indicates to some extent the effect of efficiency of management and density of traffic upon their financial showing. The operating ratio depends upon two factors—expenses and revenues—and a high or low operating ratio may point either to high or low expenses or to low or high revenues. As a rule, the operating ratio is lower in the larger than in the smaller cities, owing largely to the fact that the density of traffic varies more or less directly with the density of population. As to expenses, the wages per employee range higher in the larger cities than in small cities or in rural districts, and interruptions to traffic and obstructions retarding

speed on surface lines are more prevalent in the larger cities, all of which circumstances tend to increase the average operating expense; but the effect of these conditions upon the operating ratio is offset by the larger number of passengers carried per car-mile and the greater passenger revenue due to the greater density of traffic. Some of the factors that tend to vitiate operating ratio comparisons are the nonrailway activities of some railway companies, such as the sale of electric current, the operation of pleasure resorts, etc. Furthermore, freight, mail, and express businesses are prominent elements in some cases and absent in others. Interurban railways are in many respects more closely allied with steam railroads than with urban street railways, and the conditions under which elevated and subway roads operate are very different from those in the case of surface lines.

Table 127 assembles the operating ratio statistics for the various classified groups of companies.

The expense factor of the operating ratio does not include taxes, these being included with interest and other fixed charges. The ratios for 1912, as a general rule, are lower than those for 1907 and higher than those for 1902, and the range covered by these figures for the several divisions is somewhat narrower for 1912 than for the earlier years.

The ratio of net revenue from operation to total operating revenues is very obviously the complement of the operating ratio, and therefore as the operating ratio increases the net revenue ratio decreases.



Table 127

DIVISION AND CLASS.	OPERATING RATIOS.		
	1912	1907	1902
ALL COMPANIES.			
United States.....	58.7	60.1	57.5
New England.....	66.0	67.8	68.8
Middle Atlantic.....	56.7	57.6	54.8
East North Central.....	58.2	60.7	56.6
West North Central.....	61.0	54.1	55.5
South Atlantic.....	54.7	57.1	54.6
East South Central.....	57.8	60.2	56.6
West South Central.....	61.0	61.2	61.5
Mountain.....	57.9	57.1	61.7
Pacific.....	59.7	68.2	56.3
CLASSIFIED COMPANIES.			
Companies reporting net income.....	56.8	58.8	56.0
Companies reporting net deficit.....	71.6	64.7	67.5
Companies classified according to income from railway operations:			
Class A—\$1,000,000 and over.....	56.7	58.4	54.8
Class B—\$250,000 but less than \$1,000,000.....	61.7	61.9	58.8
Class C—Less than \$250,000.....	68.3	67.4	67.7
Companies without and with commercial lighting:			
Class X—Without commercial lighting.....	59.2	60.0	57.4
Class Y—With commercial lighting.....	56.0	60.3	58.1
Companies classified as—			
Elevated and subway.....	45.2	44.7	-----
Surface.....	60.0	61.5	-----

At the censuses of 1902 and 1907 an analysis of companies was made on the basis of their operating ratios. Table 128 shows the number of companies that had operating ratios falling within specified limits, for all companies for 1912, 1907, and 1902, and for company groups for 1912 and 1907.

Table 128

OPERATING RATIO (PER CENT).	DISTRIBUTION OF OPERATING COMPANIES WITH RESPECT TO OPERATING RATIO.				
	1912	1907	1902	Increase in number. <sup>1</sup>	
				1907-1912	1902-1907
Total—All companies.....	975	939	799	36	140
Operating ratio (per cent):					
Under 50.....	71	78	73	-7	5
50 but under 60.....	224	195	169	29	26
60 but under 70.....	232	263	216	-31	47
70 but under 80.....	177	160	121	17	39
80 but under 90.....	110	109	92	1	17
90 and over.....	161	134	128	27	6
Companies classified according to income from railway operations:					
Class A—\$1,000,000 and over.....	91	76	( <sup>2</sup> )	15	-----
Under 50.....	15	12	( <sup>2</sup> )	3	-----
50 but under 60.....	44	29	( <sup>2</sup> )	15	-----
60 but under 70.....	27	21	( <sup>2</sup> )	6	-----
70 but under 80.....	4	10	( <sup>2</sup> )	-6	-----
80 but under 90.....	-----	4	( <sup>2</sup> )	-4	-----
90 and over.....	1	-----	( <sup>2</sup> )	1	-----
Class B—\$250,000 but less than \$1,000,000.....	154	130	( <sup>2</sup> )	24	-----
Under 50.....	20	10	( <sup>2</sup> )	10	-----
50 but under 60.....	61	47	( <sup>2</sup> )	14	-----
60 but under 70.....	37	40	( <sup>2</sup> )	-9	-----
70 but under 80.....	19	20	( <sup>2</sup> )	-1	-----
80 but under 90.....	13	6	( <sup>2</sup> )	7	-----
90 and over.....	4	1	( <sup>2</sup> )	3	-----
Class C—Less than \$250,000.....	730	733	( <sup>2</sup> )	-3	-----
Under 50.....	36	56	( <sup>2</sup> )	-20	-----
50 but under 60.....	119	119	( <sup>2</sup> )	-----	-----
60 but under 70.....	108	106	( <sup>2</sup> )	2	-----
70 but under 80.....	154	130	( <sup>2</sup> )	24	-----
80 but under 90.....	97	99	( <sup>2</sup> )	-2	-----
90 and over.....	156	133	( <sup>2</sup> )	23	-----
Companies classified as "Elevated and subway"					
Under 50.....	3	3	( <sup>2</sup> )	-----	-----
50 but under 60.....	3	1	( <sup>2</sup> )	2	-----
60 but under 70.....	-----	2	( <sup>2</sup> )	-2	-----
80 but under 90.....	1	-----	( <sup>2</sup> )	1	-----

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

The group of companies reporting operating ratios of 60 per cent but under 70 contains the largest number of companies in any one group at all three censuses. Of the 271 companies with operating ratios of 80 and over in 1912, 253 are of class C, 17 of class B, and only 1 of class A.

If the numbers of companies in the income-class subgroups are superadded and expressed as cumulative percentages of the totals, the pronounced correlation between the magnitude of a company's operations and its operating ratio is brought out. This is done in the following tabular statement:

OPERATING RATIO (PER CENT).	PER CENT OF COMPANIES REPORTING SPECIFIED OPERATING RATIOS.					
	Class A.		Class B.		Class C.	
	1912	1907	1912	1907	1912	1907
Under 50.....	16	16	13	8	5	8
Under 60.....	65	54	53	44	21	24
Under 70.....	95	82	77	79	44	51
Under 80.....	99	95	89	95	65	68
Under 90.....	99	100	97	99	79	82

Although the operating ratios for individual companies vary greatly within each state, yet the ratio of operating expenses to operating revenues for all the railways of a state may be taken as a typical ratio for the state. State ratios of this character are presented in Table 158 (p. 302), and are reproduced in Table 129, the states being ranked according to operating ratios in 1912.

The average for the United States as a whole shows a decrease from 60.1 per cent in 1907 to 58.7 per cent in 1912, preceded by an increase from 1902 to 1907. Oregon shows the lowest operating ratio in 1912 (48.5 per cent), Nebraska the lowest in 1907 (48.4 per cent), and Minnesota the lowest in 1902 (46.1 per cent); while Arizona shows the highest ratios for all three years, 85.1, 83.8, and 84.7, respectively. Decreases appear for 26 states and increases for 22 states.

Table 129

STATE	OPERATING RATIO. <sup>1</sup>		
	1912	1907	1902
United States.....	58.7	60.1	57.5
Oregon.....	48.5	60.0	62.7
Utah.....	51.4	61.5	65.6
Maryland.....	51.7	50.2	47.2
Georgia.....	51.9	55.4	51.9
Wisconsin.....	52.3	52.7	51.1
West Virginia.....	52.9	60.1	59.2
Tennessee.....	53.2	54.8	67.8
District of Columbia.....	53.4	52.9	52.0
Delaware.....	54.3	62.8	72.1
Illinois.....	54.6	63.3	58.4
Arkansas.....	54.7	55.2	58.2
Colorado.....	56.0	50.8	58.4
New York.....	56.0	56.7	56.8
Washington.....	56.0	66.1	62.0
Nebraska.....	56.5	48.4	57.1
Virginia.....	56.6	63.8	65.0
Maine.....	56.9	66.5	73.1
Vermont.....	57.5	71.1	80.7
Pennsylvania.....	57.7	59.2	51.5
Alabama.....	58.0	67.6	58.7
Indiana.....	58.1	56.2	58.2
New Jersey.....	58.4	61.3	53.1
Florida.....	58.7	70.0	64.1
Kansas.....	58.8	53.8	69.4

<sup>1</sup> Italics indicate ratios above the average for the United States.



Table 129—Continued. STATE.	OPERATING RATIO. <sup>1</sup>		
	1912	1907	1902
Kentucky.....	60.1	59.2	53.2
Louisiana.....	60.8	59.5	60.4
Minnesota.....	60.8	50.0	46.1
Iowa.....	61.3	65.8	61.3
Texas.....	61.4	63.7	64.2
Missouri.....	61.9	53.8	56.8
Ohio.....	62.2	60.3	55.1
Michigan.....	63.0	59.8	56.3
Connecticut.....	63.5	66.8	64.7
Rhode Island.....	63.5	61.9	63.8
California.....	63.6	70.5	54.2
North Dakota.....	64.4	65.3	.....
North Carolina.....	66.6	62.7	73.7
Oklahoma.....	67.1	63.4	.....
Massachusetts.....	67.6	63.5	69.5
South Carolina.....	68.0	59.9	66.7
Idaho.....	70.1	61.8	60.9
Mississippi.....	72.5	65.4	74.3
Montana.....	73.0	72.6	74.2
Nevada.....	73.2	79.9	.....
South Dakota.....	75.5	52.5	.....
New Hampshire.....	79.3	82.3	79.3
Wyoming.....	80.1	.....	.....
New Mexico.....	83.5	69.7	71.5
Arizona.....	85.1	83.8	84.7

<sup>1</sup> Italics indicate ratios above the average for the United States.

*Relation of operating ratio to density of traffic.*—One of the chief factors governing the ratio of operating

expenses to operating revenues is density of traffic. A comparison of the number of revenue passengers carried per mile of track, which is a measure of traffic density, with the operating ratios shows, as a rule, that a decrease in the ratio accompanies an increase in traffic density; and a comparison of the number of revenue passengers carried per car-mile with the operating ratios shows a similar relation. Table 130 gives the number of companies, by ratio groups, distributed according to number of revenue passengers carried per mile of track, and according to number carried per car-mile.

It will be seen that the companies with low traffic densities have, proportionately, the largest representation in the high-ratio groups, while those with high traffic densities are, proportionately, the most numerous in the groups having low operating ratios. Thus, with respect to passengers per mile of track: The companies averaging fewer than 50,000 revenue passengers per mile of track, which constituted 33.6 per cent of all companies in 1912, comprised but 22.2 per cent of the companies with an operating ratio of less than 60 per cent, and 48.1 per cent of those with an operating ratio of 80 per cent and over.

Table 130

	TOTAL NUMBER OF COMPANIES.		NUMBER OF COMPANIES REPORTING OPERATING RATIO—											
			Under 50 per cent.		50 per cent but under 60 per cent.		60 per cent but under 70 per cent.		70 per cent but under 80 per cent.		80 per cent but under 90 per cent.		90 per cent and over.	
	1912	1907	1912	1907	1912	1907	1912	1907	1912	1907	1912	1907	1912	1907
Total number.....	1 973	1 938	69	77	224	195	233	263	177	160	109	109	161	134
Revenue passengers per mile of track:														
Under 25,000.....	184	169	4	11	31	27	50	45	25	26	26	21	48	39
25,000 but under 50,000.....	143	134	6	9	24	21	27	22	30	22	16	26	40	34
50,000 but under 100,000.....	242	232	13	19	40	39	61	73	46	37	37	25	45	39
100,000 but under 200,000.....	220	263	19	17	60	61	55	83	47	52	22	30	17	20
200,000 but under 300,000.....	95	67	11	7	33	20	23	23	16	12	6	3	6	2
300,000 but under 400,000.....	41	32	9	8	14	11	10	8	5	5	1	.....	2	.....
400,000 and over.....	48	41	7	6	22	16	7	9	8	6	1	4	3	.....
Revenue passengers per car-mile:														
Under 2.....	157	144	4	6	28	26	34	35	27	23	17	19	47	35
2 but under 3.....	168	164	7	11	27	34	36	27	32	30	27	27	39	35
3 but under 4.....	194	217	10	15	38	30	40	68	43	36	25	36	38	32
4 but under 5.....	200	202	15	15	52	56	64	67	37	37	17	11	15	16
5 but under 6.....	137	122	16	17	43	26	37	41	18	23	15	7	8	8
6 but under 7.....	57	37	9	4	20	10	14	10	5	6	3	4	6	3
7 and over.....	60	52	8	9	16	13	8	15	15	5	5	5	8	5

<sup>1</sup> Not including 2 companies doing freight business only.

<sup>2</sup> Exclusive of 6 companies which failed to furnish this information, and 1 freight road.

In 1907 the companies averaging fewer than 50,000 revenue passengers per mile of track, which constituted 32.3 per cent of all companies, comprised 25 per cent of the companies with an operating ratio of less than 60 per cent, and 49.4 per cent of those with a ratio of 80 per cent and over. On the other hand, the roads averaging at least 300,000 fare passengers per mile of track, which constituted 9.1 per cent of all companies in 1912, comprised 17.7 per cent of the less than 60 per cent class, and but 2.6 per cent of the 80 per cent and over class; the 1907 proportions being 7.8 per cent of all companies, 15.1 per cent of the less than 60 per cent class, and 1.6 per cent of the 80 per cent and over class. Similar deductions can be made from the standpoint of revenue passengers per car-mile.

The effect of density of traffic upon financial accounts appears also when the ratios of operating expenses and deductions from income to total expenses are studied in connection with number of passengers per mile of track. Of roads operating under conditions otherwise similar, those with a heavy passenger traffic per mile of track report relatively small amounts for operating expenses and large amounts for fixed charges as compared with roads of low traffic density.

Table 131 shows the complementary ratios of operating expenses and fixed charges to the totals for the various income classes of roads, and the average number of revenue passengers per mile of track for the respective classes.

Table 131

	Census.	COMPLEMENTARY RATIOS OF OPERATING EXPENSES AND DEDUCTIONS FROM INCOME, AND PASSENGERS PER MILE OF TRACK, FOR COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS, <sup>1</sup> 1912, 1907, AND 1902.			
		Total—All companies.	Class A. \$1,000,000 and over.	Class B. \$250,000 but less than \$1,000,000.	Class C. Less than \$250,000.
Revenue passengers per mile of track.	1912 1907 1902	232,556 216,522 212,217	358,372 361,701 399,058	118,998 123,390 150,218	75,484 74,788 74,000
Per cent of total expenses represented by—					
Operating expenses.....	1912 1907 1902	63.5 64.5 64.7	61.7 63.0 61.8	67.7 66.4 68.1	70.1 70.7 73.4
Deductions from income...	1912 1907 1902	36.5 35.5 35.3	38.3 37.0 38.2	32.3 33.6 31.9	29.9 29.3 26.6

## BALANCE SHEETS.

The balance sheets furnished to the Census Bureau show the financial condition of the companies at the end of the year covered by the reports, and the general balance sheets shown are constructed by aggregating the figures contained in the reports of the companies. Securities and other liabilities of one company to

another are included in the statement of liabilities as reported by the debtor company and in the statement of assets as reported by the creditor company, although it may happen that the debtor company carries the securities at their face valuation and the creditor company at only a nominal valuation. Different methods of bookkeeping are reflected in the balance sheets, but the very general adoption of the standard classification of accounts and form of report prescribed by the American Street and Interurban Railway Accountants Association has tended toward uniformity in methods of bookkeeping, and reports deviating from the standard have been made to conform thereto, so far as possible.

Table 164 (p. 318) is a condensed balance sheet for operating and lessor companies combined, by geographic divisions and by states, for 1912, 1907, and 1902.

Table 165 (p. 322) is the balance sheet for operating and lessor companies combined, by geographic divisions and states, for 1912.

In Table 132 the statements furnished by all companies for 1912, 1907, and 1902 are combined and condensed in a net balance sheet.

## STREET AND ELECTRIC RAILWAYS—NET BALANCE SHEET, OPERATING AND LESSOR COMPANIES: 1912, 1907, AND 1902.

Table 132	Census.	Number of companies.	ASSETS.			Total—Assets or liabilities.	LIABILITIES.			
			Cost of construction, equipment, and real estate.	Other investments.	Current and other assets.		Capital stock.	Funded debt.	Unfunded debt, reserves, and current and other liabilities.	Net surplus.
Operating and lessor companies.	1912 1907 1902	1,260 1,230 987	\$4,596,563,292 3,637,668,708 2,167,634,077	\$465,250,414 374,064,197 152,513,997	\$348,731,487 251,528,687 213,699,184	\$5,410,545,193 4,263,861,592 2,533,847,258	\$2,379,346,313 2,031,986,366 1,266,883,289	\$2,329,221,828 1,672,959,930 974,112,422	\$606,690,400 488,471,004 252,145,435	\$95,236,652 70,444,292 40,706,112
Per cent of total.....	1912 1907 1902	----- ----- -----	85.0 85.3 85.5	8.6 8.8 6.0	6.4 5.9 8.4	100.0 100.0 100.0	44.0 47.7 50.0	43.0 39.2 38.4	11.2 11.5 10.0	1.8 1.7 1.6
Per cent of increase:										
1902-1912.....	30.3	-----	112.1	205.1	63.2	113.5	87.8	139.1	140.6	134.1
1907-1912.....	2.4	-----	26.4	24.2	38.6	26.9	17.1	39.2	24.2	35.3
1902-1907.....	27.2	-----	67.8	145.7	17.7	68.3	60.4	71.7	93.7	73.1
Operating companies.....	1912 1907	975 939	\$3,867,215,202 2,710,051,703	\$385,973,185 329,803,587	\$331,692,759 172,213,837	\$4,584,881,146 3,221,069,127	\$1,957,300,149 1,508,759,290	\$1,999,417,874 1,264,504,062	\$553,451,347 406,256,041	\$74,711,776 41,549,734
Per cent of total.....	1912 1907	----- -----	84.3 84.4	8.4 10.2	7.2 5.3	100.0 100.0	42.7 46.8	43.6 39.3	12.1 12.6	1.6 1.3
Per cent of increase:										
1907-1912.....	3.8	-----	42.2	17.0	92.6	42.3	29.7	58.1	36.2	79.8
Lessor companies.....	1912 1907	285 291	\$729,348,090 918,617,005	\$79,277,229 44,860,610	\$17,038,728 79,314,850	\$825,664,047 1,042,792,465	\$422,046,164 523,227,076	\$329,803,954 408,455,868	\$53,239,053 82,214,963	\$20,574,876 28,894,558
Per cent of total.....	1912 1907	----- -----	88.3 88.1	9.6 4.3	2.1 7.6	100.0 100.0	51.1 50.2	39.9 39.2	6.4 7.9	2.5 2.3
Per cent of increase: <sup>3</sup>										
1907-1912.....	-2.1	-----	-20.6	76.7	-78.5	-20.8	-19.3	-19.3	-35.2	-28.8

<sup>1</sup> Exclusive of 6 companies which failed to furnish this information.

<sup>2</sup> Exclusive of 20 companies which failed to furnish this information.

<sup>3</sup> A minus sign (—) denotes decrease.

The designation "Net balance sheet" is used because the surplus shown is a net surplus obtained by deducting the sum of the deficits from the sum of the surpluses, the total assets and total liabilities being reduced by an amount equal to the sum of the deficits.

*Assets.*—The amount reported for cost of construction, equipment, and real estate should not be taken as representing the actual amount invested in way and structures and equipment. Consolidations make it difficult to secure true figures. In 1912 franchise val-

ues were largely carried as sundries, but it is a common practice to charge these values to cost of construction. Many of the street railway systems in the larger cities are the results of many consolidations, and the turnover in each instance has carried with it a large but unknown value for franchises, good will, etc., so that a considerable portion of the cost of construction and equipment as reported represents capitalized franchise values, etc. Hence, to secure uniformity in the exceptional cases where franchise values were re-

ported separately, they have been added to the cost of construction and equipment. The amount reported as cost of construction, equipment, and real estate represents approximately the same proportion of the total assets in 1912, 1907, and 1902, the variation in the ratios being but one-half of 1 per cent. The increase in the amount reported was 112.1 per cent for the decade 1902-1912, as compared with an increase of 13.51 per cent in the total assets. The account of "Other investments" includes the detailed accounts designated in other tables as "Stocks and bonds of other electric railway companies," "Stocks and bonds of companies other than electric railways," "Treasury securities," and "Other permanent investments," while "Current and other assets" comprise the balance of the detail accounts. The total amount of "Other investments" in 1912 (\$465,250,414) is an increase of 205.1 per cent over the amount reported in 1902. It constituted, however, only 8.6 per cent of the total assets in 1912, a larger proportion than in 1902, but a little less than in 1907.

*Liabilities.*—The ratio of capital stock to total liabilities is decreasing and the ratio of funded debt increasing. Capital stock constituted 44 per cent of the total liabilities in 1912, as compared with 47.7 per cent in 1907 and 50 per cent in 1902, while funded debt constituted 43 per cent in 1912, as compared with 39.2 and 38.4 per cent in the former years. Combined, there was but little change, the proportion of total liabilities represented by capitalization—capital stock and funded debt combined—being 87 per cent in 1912, as compared with 86.9 per cent in 1907 and 88.4 per cent in 1902, while the per cent of increase in capitalization for the decade was 110.1 per cent, as compared with an increase of 113.5 per cent for total liabilities and 112.1 per cent for cost of construction; but the per cent of increase for the decade for funded debt was 139.1 per cent and for capital stock 87.8 per cent. Differences in statements of accounts at different censuses render a comparison involving primary balance-sheet accounts of questionable value. The net surplus, \$95,286,652, in 1912, is the resultant found by deducting the total profit and loss deficit from the total profit and loss surplus. In 1912, 787 companies showed balance-sheet surpluses to the amount of \$133,436,096, and 352 companies balance-sheet deficits to the amount of \$38,149,444, 121 companies showing balanced statements with neither profit and loss surplus nor deficit. In like manner, the net surplus of \$70,444,292 in 1907 is the balance of surpluses to the amount of \$106,623,225 over deficits to the amount of \$36,178,933, 710 companies reporting surplus balances, 303 deficit balances, and 217 balanced statements with neither profit and loss surplus nor deficit. The distribution of the number of companies reporting surplus balances and deficit balances, by geographic divisions, for 1912, is shown in Table 133.

Table 133

NUMBER OF COMPANIES REPORTING SURPLUS BALANCES AND DEFICIT BALANCES: 1912.

DIVISION.	All companies.			Number reporting a profit and loss—						Number reporting balanced state-ments—neither surplus nor deficit.		
				Surplus.			Deficit.					
	Total.	Operating.	Lessor.	Total.	Operating.	Lessor.	Total.	Operating.	Lessor.	Total.	Operating.	Lessor.
United States....	1,260	975	285	787	641	146	352	310	42	121	24	97
New England.....	119	91	28	82	61	21	38	28	5	4	2	2
Middle Atlantic.....	436	246	190	239	146	93	123	92	31	74	8	66
East North Central.....	253	222	31	172	157	15	64	61	3	17	4	13
West North Central.....	90	85	5	63	60	3	21	21	...	6	4	2
South Atlantic.....	123	107	16	80	73	7	33	32	1	10	2	8
East South Central.....	46	45	1	32	31	1	14	14	...	...	...	...
West South Central.....	83	79	4	59	56	3	21	21	...	3	2	1
Mountain.....	42	40	2	21	21	...	19	18	1	2	1	1
Pacific.....	68	60	8	39	36	3	24	23	1	5	1	4

The increase in deficit balances for the period 1907-1912 was \$1,970,511, and the increase in surplus balances was \$26,812,871. The states showing net deficits in 1912 for the railway companies of each state as a whole were New Hampshire, Pennsylvania, Mississippi, New Mexico, Arizona, and Idaho. The deficit states in 1907 were Vermont and Delaware, and in 1902, New Jersey, Illinois, Kansas, North Carolina, and District of Columbia.

*Balance sheet of operating and lessor companies.*—The balance-sheet statistics for operating and lessor companies, though combined to show the aggregate for the industry, are somewhat different in character and are presented separately in Table 134 for 1912. Comparative statistics for 1907 are not given, on account of differences in accounts as reported for the two censuses.

The lessor companies represented 15.3 per cent of the combined balance-sheet totals, whereas in 1907 they represented 24.5 per cent. The bulk of the investments of the lessor companies in the stocks and bonds of other railway companies is confined to a comparatively few companies. Of the 285 lessor companies, only 28 reported such investments—the same number as in 1907; and of the total amount, \$60,664,030, reported, \$47,226,486, or nearly four-fifths, was returned by 15 lessor companies in Pennsylvania, four-fifths of this amount, in turn, being reported by two companies. Of the operating companies, 131 owned stocks and bonds in other electric railway companies to the amount of \$206,298,309, as compared with 108 companies in 1907 to the amount of \$180,941,984. The carrying of treasury stocks and bonds as assets by lessor companies was reported by 23 companies, but nearly one-half of the treasury securities so carried were reported by 1 company. The holdings of operating companies in treasury stocks and bonds, on the other hand, was distributed among 200 companies.

## STREET AND ELECTRIC RAILWAYS—NET BALANCE SHEET, OPERATING AND LESSOR COMPANIES, BY ACCOUNTS: 1912.

Table 134

ACCOUNT.	Total— All companies.	Operating companies.	Lessor companies.	PER CENT OF TOTAL.	
				Operating companies.	Lessor compa- nies.
Number of companies.....	1,260	975	285	77.4	22.6
Total—Assets or liabilities.....	\$5,410,545,193	\$4,584,881,140	\$825,664,047	84.7	15.3
ASSETS.					
Cost of construction, equipment, and real estate.....	4,596,563,202	3,867,215,202	729,348,090	84.1	15.9
Stocks and bonds of other electric railway companies.....	266,962,339	206,298,309	60,664,030	77.3	22.7
Stocks and bonds of companies other than electric railways.....	57,774,666	53,238,280	4,536,386	92.1	7.9
Treasury securities.....	93,142,825	81,718,194	11,424,631	87.7	12.3
Stock.....	30,875,789	28,467,510	2,408,279	92.2	7.8
Bonds.....	62,267,036	53,250,684	9,016,352	85.5	14.5
Other permanent investments.....	47,370,584	44,718,402	2,652,182	94.4	5.6
Cash and current assets, including supplies.....	178,853,733	171,839,163	7,014,570	96.1	3.9
Stock and bond discount.....	67,754,310	67,271,214	483,096	99.3	0.7
Sinking and other special funds.....	27,761,430	26,203,287	1,558,143	94.4	5.6
Sundries.....	74,362,014	66,379,095	7,982,919	89.3	10.7
LIABILITIES.					
Capital stock.....	2,379,346,313	1,957,300,149	422,046,164	82.3	17.7
Common.....	1,970,385,003	1,606,071,539	364,313,464	81.5	18.5
Preferred.....	408,961,310	351,228,610	57,732,700	85.9	14.1
Funded debt.....	2,329,221,828	1,999,417,874	329,803,954	85.8	14.2
Real-estate mortgages.....	6,097,245	5,593,168	504,077	91.7	8.3
Floating debt.....	296,161,797	279,910,481	16,251,316	94.5	5.5
Reserves.....	80,775,824	77,275,608	3,500,216	95.7	4.3
Accounts payable.....	86,715,392	81,617,168	5,098,224	94.1	5.9
Interest and taxes due and accrued.....	54,079,730	52,882,137	1,197,593	97.8	2.2
Dividends due.....	4,164,748	4,011,405	153,343	96.3	3.7
Sundries.....	78,695,664	52,161,380	26,534,284	66.3	33.7
Net surplus.....	95,286,652	74,711,776	20,574,876	78.4	21.6

Table 135 shows the total debt of the operating and lessor companies, represented by funded debt, real estate mortgages, and floating debt, in 1912 and 1907, by geographic divisions.

Table 135

DIVISION.	Cen- sus	DEBT OF OPERATING AND LESSOR COMPANIES: 1912 AND 1907.			
		Total.	Funded debt.	Real- estate mort- gages.	Floating debt.
United States.....	1912	\$2,631,480,870	\$2,329,221,828	\$6,097,245	\$296,161,797
	1907	1,955,946,832	1,672,959,930	4,059,805	278,927,097
New England.....	1912	148,135,670	129,639,840	330,842	18,164,988
	1907	146,201,708	130,606,958	269,032	15,325,718
Middle Atlantic.....	1912	951,252,709	801,682,533	4,220,917	145,440,259
	1907	689,051,342	557,410,106	2,376,778	129,264,458
East North Central....	1912	623,356,959	589,361,398	381,621	33,613,940
	1907	482,373,354	436,565,900	1,140,536	44,666,918
West North Central....	1912	175,940,636	155,092,155	605,830	20,242,651
	1907	151,032,942	130,583,800	29,100	20,420,042
South Atlantic.....	1912	218,740,732	205,449,168	403,100	12,888,464
	1907	165,512,631	151,682,049	76,900	13,753,682
East South Central....	1912	75,153,648	71,296,580	22,285	3,834,783
	1907	58,821,027	53,758,167	17,000	5,045,860
West South Central....	1912	76,228,219	65,691,669	53,050	10,478,500
	1907	54,287,979	45,827,950	57,357	8,402,672
Mountain.....	1912	54,906,270	46,014,459	.....	8,891,811
	1907	33,094,273	29,699,600	.....	3,394,673
Pacific.....	1912	307,766,027	265,094,026	65,600	42,606,401
	1907	175,571,576	136,825,400	93,102	38,653,074
PER CENT OF IN- CREASE, 1907-1912. <sup>1</sup>					
United States.....		34.5	39.2	50.2	6.2
New England.....		1.3	-0.7	23.0	18.5
Middle Atlantic.....		38.1	43.8	78.0	12.5
East North Central....		29.2	35.0	-66.5	-24.7
West North Central....		16.5	13.8	1,981.9	-0.9
South Atlantic.....		32.2	35.4	424.2	-6.3
East South Central....		27.8	32.6	31.1	-24.0
West South Central....		40.4	43.3	1.2	24.7
Mountain.....		65.9	54.9	.....	161.9
Pacific.....		75.3	93.7	-29.5	10.2

<sup>1</sup> A minus sign (—) denotes decrease.

The interests of the lessor companies are, as a rule, confined to railway properties, their nonrailway investments in 1912 constituting but nine-tenths of 1 per cent of their total assets. Only 14 lessor companies reported investments in stocks and bonds of companies other than electric railways and 10 in "Other permanent investments."

The lessor companies represent proportionately less of the funded debt than of the capital stock, namely, 14.2 per cent of the total funded debt and 17.7 per cent of the total capital stock. There were 91 lessor companies and 194 operating companies in 1912 that reported no funded debt. Real-estate mortgages were reported by 10 and floating debt by 39 lessor companies. Of the total amount reported as sundry liabilities, \$23,577,916, or nearly 90 per cent, was reported by Pennsylvania companies, and of this amount, \$17,398,074 was reported by 3 companies.

The net surplus shown for lessor companies (Table 134) is the difference between an aggregate surplus of \$24,125,159 reported by 146 companies and an aggregate deficit of \$3,550,283 reported by 42 companies, the other 97 companies reporting neither surplus nor deficit. In 1907, 122 companies reported surpluses aggregating \$32,201,859 and 38 companies deficits aggregating \$3,307,301. Of the lessor companies reporting deficits in 1912, 15 were in Pennsylvania, 11 in New York, 5 in Massachusetts, 5 in New Jersey, 2 in Indiana, and 1 each in California, Idaho, Illinois, and Virginia.

Table 136 is an analysis of the surplus and deficit balances, for 1912 and 1907, and shows the number of companies reporting surplus balances, and deficit balances, respectively, and the per cent each is of the total number.

Table 136

ANALYSIS OF SURPLUS AND DEFICIT BALANCES:  
1912 AND 1907.

	Cen- sus.	Total—All companies.	Operating companies.	Lessor companies.	Per cent of total.	
					Operating com- panies.	Lessor com- panies.
Number of com- panies.	1912 1907	1,260 1,230	975 939	285 291	77.4 76.3	22.6 23.7
Net surplus.....	1912 1907	\$95,286,652 \$70,444,292	\$74,711,776 \$41,549,734	\$20,574,876 \$28,894,558	78.4 59.0	21.6 41.0
Surplus:						
Number of com- panies.	1912 1907	787 710	641 588	146 122	81.4 82.8	18.6 17.2
Per cent of total.	1912 1907	62.5 57.7	65.7 62.6	51.2 41.9	-----	-----
Amount.....	1912 1907	\$133,436,096 \$106,623,225	\$109,310,937 \$74,421,366	\$24,125,159 \$32,201,859	81.9 69.8	18.1 30.2
Deficit:						
Number of com- panies.	1912 1907	352 303	310 265	42 38	88.1 87.5	11.9 12.5
Per cent of total.	1912 1907	27.9 24.6	31.7 28.2	14.7 13.1	-----	-----
Amount.....	1912 1907	\$38,149,444 \$36,178,933	\$34,599,161 \$32,871,632	\$3,550,283 \$3,307,301	90.7 90.9	9.3 9.1
Neither surplus nor deficit:						
Number of com- panies.	1912 1907	121 217	24 86	97 131	19.8 39.6	80.2 60.4
Per cent of total.	1912 1907	9.6 17.6	2.5 9.2	34.0 45.0	-----	-----

The per cent distribution of the total assets and total liabilities, respectively, among the several accounts for operating and lessor companies, for 1912, is given in Table 137.

Table 137

PER CENT DISTRIBUTION OF  
ASSETS AND LIABILITIES:  
1912.

ACCOUNT.	PER CENT DISTRIBUTION OF ASSETS AND LIABILITIES: 1912.		
	Total— All com- panies.	Operat- ing com- panies.	Lessor com- panies.
Assets, total.....	100.0	100.0	100.0
Cost of construction, equipment, and real estate...	85.0	84.3	88.3
Stocks and bonds of other electric railway com- panies.....	4.9	4.5	7.3
Stocks and bonds of companies other than electric railways.....	1.1	1.2	0.5
Treasury securities.....	1.7	1.8	1.4
Other permanent investments.....	0.9	1.0	0.3
Cash and current assets, including supplies.....	3.3	3.7	0.8
Stock and bond discount.....	1.3	1.5	0.1
Sinking and other special funds.....	0.5	0.6	0.2
Sundries.....	1.4	1.4	1.0
Liabilities, total.....	100.0	100.0	100.0
Capital stock.....	44.0	42.7	51.1
Funded debt.....	43.0	43.6	39.9
Real-estate mortgages.....	0.1	0.1	0.1
Floating debt.....	5.5	6.1	2.0
Reserves.....	1.5	1.7	0.4
Accounts payable.....	1.6	1.8	0.6
Interest and taxes due and accrued.....	1.0	1.2	0.1
Dividends due.....	0.1	0.1	( <sup>1</sup> )
Sundries.....	1.5	1.1	3.2
Net surplus.....	1.8	1.6	2.5

<sup>1</sup> Less than one-tenth of 1 per cent.

*Balance sheet, by states.*—The increase in total assets and liabilities during the period 1907–1912 was, pro-

portionately, the greatest in the Pacific, Mountain, and South Atlantic divisions, in the order named. The leading 10 states are ranked in the following tabular statement according to per cent of increase during the decade 1902–1912 and during the two five-year periods 1907–1912 and 1902–1907:

1902–1912		1907–1912		1902–1907	
State.	Per cent of in- crease.	State.	Per cent of in- crease.	State.	Per cent of in- crease.
Oklahoma.....	( <sup>1</sup> )	Oklahoma.....	200	Oregon.....	538
Oregon.....	1,184	North Carolina...	168	Mississippi.....	500
Kansas.....	818	Georgia.....	140	Kansas.....	373
Washington.....	700	Washington.....	105	Arkansas.....	330
Mississippi.....	643	Oregon.....	101	Indiana.....	310
North Carolina...	536	Kansas.....	94	Washington.....	290
California.....	483	Texas.....	78	California.....	255
Arkansas.....	479	Iowa.....	68	Louisiana.....	251
Indiana.....	387	West Virginia....	66	Nebraska.....	191
West Virginia....	324	California.....	64	Virginia.....	169

<sup>1</sup> No street or electric railways in 1902.

The leading 10 states ranked in like manner according to the amount of increase in assets and liabilities are as follows:

State.	Amount of increase.	State.	Amount of increase.
1902–1912		1907–1912—Continued.	
New York.....	\$441,112,709	Massachusetts.....	\$47,872,162
California.....	398,577,173	Oregon.....	42,433,043
Pennsylvania.....	237,334,200	Indiana.....	33,407,317
Ohio.....	217,124,193	Illinois.....	31,857,219
Indiana.....	168,123,372	Virginia.....	29,139,243
Illinois.....	161,689,619		
Washington.....	140,233,646	1902–1907	
Massachusetts.....	90,582,512	New York.....	\$231,451,906
Oregon.....	77,733,105	California.....	210,997,729
Georgia.....	64,694,599	Ohio.....	199,327,856
1907–1912		Pennsylvania.....	174,591,128
New York.....	\$209,660,803	Indiana.....	134,716,055
California.....	187,579,444	Illinois.....	129,832,400
Washington.....	82,216,537	Louisiana.....	60,538,962
Pennsylvania.....	62,743,072	Washington.....	58,067,109
Georgia.....	53,448,863	Massachusetts.....	42,710,350
		Wisconsin.....	39,442,718

The heavy development in Ohio occurred during the period 1902–1907, and Georgia during the period 1907–1912.

A condensation of the balance-sheet statistics for the three census years is given in Table 138, by geographic divisions. On the assets side, the item "Other investments" includes the holdings of stocks and bonds of other companies, both railway and nonrailway, and other permanent investments and treasury securities, for 1912 and 1907. Treasury securities held as assets were not reported separately in 1902. The profit and loss surplus in every case is the net surplus.

## CONDENSED NET BALANCE SHEET OF OPERATING AND LESSOR COMPANIES COMBINED, BY GEOGRAPHIC DIVISIONS: 1912, 1907, AND 1902.

Table 138

DIVISION.	Cen- sus.	Num- ber of com- panies.	ASSETS.			Total assets or liabilities.	LIABILITIES.		
			Cost of con- struction, equipment, and real estate.	Other investments.	Current and other assets.		Capitalization.	Unfunded debt, re- serves, and current and other liabilities.	Net profit and loss surplus.
UNITED STATES .....	1912	1,260	\$4,596,563,292	\$465,250,414	\$348,731,487	\$5,410,545,193	\$4,708,568,141	\$606,690,400	\$35,286,652
	1907	1,230	\$3,637,668,768	\$374,604,107	\$251,528,687	\$4,263,801,562	\$3,704,940,296	\$488,471,004	\$70,444,292
	1902	1,067	\$2,167,634,077	\$152,513,907	\$213,099,184	\$2,533,247,268	\$2,240,995,711	\$262,145,435	\$40,706,112
Per cent of increase—									
1902-1912 .....		30.3	112.1	204.9	63.2	113.5	110.1	140.6	134.1
1907-1912 .....		2.4	26.4	24.2	38.6	28.9	27.1	24.2	35.3
1902-1907 .....		27.2	67.8	145.7	17.7	68.3	65.3	93.7	73.1
GEOGRAPHIC DIVISIONS:									
New England .....	1912	119	\$354,605,174	\$13,591,713	\$23,540,590	\$391,746,477	\$334,083,440	\$48,492,176	\$9,170,861
	1907	145	\$286,023,884	\$4,985,719	\$18,911,758	\$309,921,361	\$268,765,346	\$33,647,659	\$7,508,356
	1902	166	\$194,281,990	\$2,893,501	\$13,576,176	\$210,751,676	\$180,450,839	\$27,386,038	\$2,914,744
Per cent of increase <sup>1</sup> —									
1902-1912 .....		-28.3	82.5	369.7	73.5	85.9	85.1	77.1	214.6
1907-1912 .....		-17.9	24.0	172.6	24.5	26.4	24.3	44.1	22.1
1902-1907 .....		-12.7	47.2	72.3	39.3	47.1	48.9	22.9	157.6
Middle Atlantic .....	1912	436	\$1,471,795,717	\$201,251,361	\$127,930,909	\$1,800,977,987	\$1,513,580,910	\$263,183,933	\$24,213,144
	1907	450	\$1,266,196,650	\$113,030,336	\$133,576,459	\$1,512,803,445	\$1,266,289,832	\$226,811,383	\$19,702,230
	1902	343	\$894,650,238	\$69,201,142	\$120,260,275	\$1,084,111,655	\$914,955,559	\$146,105,604	\$23,050,492
Per cent of increase <sup>1</sup> —									
1902-1912 .....		27.1	64.5	190.8	6.4	66.1	65.4	80.1	5.0
1907-1912 .....		-3.1	16.2	78.1	-4.2	19.0	19.5	16.0	22.9
1902-1907 .....		31.2	41.5	63.3	11.1	39.5	38.4	55.2	-14.5
East North Central .....	1912	253	\$1,099,283,481	\$98,896,346	\$56,645,231	\$1,254,825,058	\$1,123,665,109	\$105,915,709	\$25,244,240
	1907	263	\$970,924,964	\$129,874,562	\$32,500,800	\$1,133,299,606	\$1,026,261,945	\$91,716,445	\$15,321,216
	1902	189	\$518,927,728	\$44,172,172	\$40,865,503	\$603,965,403	\$554,232,171	\$46,119,544	\$3,013,088
Per cent of increase <sup>1</sup> —									
1902-1912 .....		33.9	111.8	123.9	38.0	107.8	102.7	129.7	598.5
1907-1912 .....		-3.8	13.2	-23.9	74.3	10.7	9.5	15.5	64.8
1902-1907 .....		39.2	87.1	155.8	-20.5	87.6	85.2	98.9	323.9
West North Central .....	1912	90	\$336,808,451	\$13,518,452	\$14,077,887	\$364,404,790	\$314,330,675	\$40,228,348	\$9,836,772
	1907	77	\$280,458,765	\$5,804,107	\$6,459,986	\$292,722,858	\$256,776,596	\$29,512,516	\$6,133,746
	1902	59	\$186,626,205	\$24,426,974	\$9,466,756	\$220,519,935	\$205,210,574	\$11,229,359	\$4,080,002
Per cent of increase <sup>1</sup> —									
1902-1912 .....		52.5	80.5	-44.7	48.7	64.8	53.2	258.3	141.1
1907-1912 .....		16.9	20.1	132.9	117.9	24.5	22.4	34.9	60.4
1902-1907 .....		30.5	50.3	-76.2	31.8	32.7	25.1	165.5	50.3
South Atlantic .....	1912	123	\$375,467,897	\$40,417,302	\$31,574,545	\$447,459,744	\$402,016,673	\$34,901,604	\$10,541,467
	1907	110	\$242,357,969	\$32,955,988	\$12,718,757	\$288,032,714	\$260,023,079	\$21,600,176	\$6,409,459
	1902	77	\$162,507,589	\$6,063,844	\$6,560,203	\$175,131,636	\$167,107,079	\$6,972,848	\$1,051,709
Per cent of increase—									
1902-1912 .....		59.7	125.5	506.5	381.3	155.5	140.6	400.5	902.3
1907-1912 .....		11.8	54.9	22.6	148.3	55.4	54.6	61.6	64.5
1902-1907 .....		42.9	49.1	443.5	93.9	64.5	55.6	200.8	509.4
East South Central .....	1912	46	\$124,119,747	\$10,299,276	\$7,834,970	\$142,253,993	\$128,466,144	\$10,394,792	\$3,393,057
	1907	40	\$107,392,029	\$4,623,624	\$3,625,222	\$115,640,875	\$104,223,447	\$9,333,814	\$2,033,614
	1902	34	\$55,049,569	\$1,080,255	\$3,503,849	\$60,239,673	\$56,027,900	\$2,786,504	\$1,425,269
Per cent of increase <sup>1</sup> —									
1902-1912 .....		35.3	125.5	510.8	123.6	136.1	129.3	273.0	138.1
1907-1912 .....		15.0	15.6	122.8	116.1	23.0	23.3	10.8	66.8
1902-1907 .....		17.6	95.1	174.2	3.5	92.0	86.0	236.8	42.7
West South Central .....	1912	83	\$136,295,611	\$24,184,728	\$12,792,829	\$173,273,168	\$152,233,874	\$17,099,641	\$3,939,653
	1907	51	\$95,693,842	\$30,838,166	\$5,738,862	\$132,270,870	\$115,030,200	\$12,978,346	\$4,262,324
	1902	32	\$32,245,293	\$180,450	\$10,597,959	\$43,023,738	\$37,542,000	\$4,475,684	\$1,006,054
Per cent of increase <sup>1</sup> —									
1902-1912 .....		150.4	322.7	13,299.8	20.7	302.7	305.5	282.1	291.6
1907-1912 .....		62.7	42.4	-21.6	122.9	31.0	32.3	31.8	-7.6
1902-1907 .....		59.4	196.8	16,986.2	-45.9	207.4	206.4	190.0	323.7
Mountain .....	1912	42	\$90,534,736	\$18,588,315	\$4,035,757	\$114,058,808	\$94,219,186	\$14,407,043	\$5,432,579
	1907	29	\$50,578,599	\$14,524,397	\$3,168,522	\$68,271,518	\$60,132,051	\$5,341,792	\$2,707,675
	1902	18	\$23,911,279	\$1,892,662	\$1,116,920	\$26,920,861	\$25,008,227	\$1,341,791	\$570,843
Per cent of increase—									
1902-1912 .....		133.3	278.6	882.1	341.9	323.7	276.8	973.7	851.7
1907-1912 .....		44.8	79.0	28.0	55.8	67.1	56.7	169.7	94.2
1902-1907 .....		61.1	111.5	667.4	183.7	183.6	140.4	298.1	390.1
Pacific .....	1912	68	\$607,652,478	\$44,502,921	\$69,389,760	\$721,545,168	\$645,963,130	\$72,067,159	\$3,514,879
	1907	65	\$338,042,006	\$38,027,298	\$34,829,041	\$410,898,345	\$347,443,800	\$57,178,873	\$6,275,672
	1902	49	\$99,434,177	\$1,996,961	\$7,751,543	\$109,182,681	\$100,461,362	\$5,728,008	\$2,098,311
Per cent of increase <sup>1</sup> —									
1902-1912 .....		38.8	511.1	2,128.5	795.2	560.9	543.0	1,158.2	17.4
1907-1912 .....		4.6	79.8	17.0	99.2	75.6	85.0	26.0	-44.0
1902-1907 .....		32.7	240.0	1,804.3	349.3	276.3	245.8	898.2	109.7

<sup>1</sup> Exclusive of 6 companies which failed to furnish this information.<sup>2</sup> Exclusive of 20 companies which failed to furnish this information.<sup>3</sup> A minus sign (—) denotes decrease.

## CHAPTER VIII.

### EMPLOYEES, SALARIES, AND WAGES.

*Character of the statistics.*—The schedule used at the present census called for the average number employed on September 16 of the census year, or, if data were not available for that day, the number for the nearest representative or normal day. The schedule used at the censuses of 1907 and 1902 called for the average number employed during the year, but many companies contended that it was impracticable to compute such an average, and September 16 was therefore adopted as a normal date, considering all industries and all localities, at the census of 1912. Separate totals were required for three classes of salaried employees—that is, salaried officers of corporations, managers and superintendents, and clerks, stenographers, and other salaried employees. Separate totals were also required for three classes of wage earners—conductors, motormen, and all other employees. In 1907 and in 1902 wage earners were grouped, by occupation, into a number of classes, but except for

conductors and motormen the grouping was unsatisfactory, as among the small and medium-size companies one employee acts in several capacities. The change in the form of the inquiry may have some effect on the numbers reported for the different classes at the census of 1912, as compared with prior censuses. It may be that in some cases foremen, inspectors, starters, and engineers, that were specified as wage earners in the schedules for 1902 and 1907, were considered salaried employees in 1912 and reported as such. Table 139 gives the comparative statistics for the United States for the three census years.

The employees represent those engaged in the operation and maintenance of the street and electric railways, including those employed in making ordinary repairs and replacements, and those employed in the operation and maintenance of light and power departments of electric railways not repairable from railway operations.

#### STREET AND ELECTRIC RAILWAYS—EMPLOYEES, BY CLASSES OF OCCUPATION.

CLASS.	1912	1907	1902	PER CENT OF INCREASE.		
				1902-1912	1907-1912	1902-1907
Number of companies.....	975	1 939	2 797	22.3	3.8	17.8
Persons employed:						
Number.....	282,461	221,429	140,769	100.7	27.6	57.3
Salaries and wages.....	\$200,890,939	\$150,991,099	\$83,210,185	127.7	33.0	71.2
Salaried employees—						
Number.....	23,271	11,700	7,128	226.5	98.9	64.1
Salaries.....	\$26,128,786	\$12,909,466	\$7,439,716	251.2	102.4	73.5
Salaried officers of corporation—						
Number.....	1,927	1,518	1,480	30.2	26.9	2.6
Salaries.....	\$5,708,553	\$3,852,252	\$2,990,745	90.9	48.2	28.8
Managers and superintendents—						
Number.....	2,882	2,094	1,327	117.2	37.6	57.8
Salaries.....	\$5,376,526	\$3,580,367	\$1,819,166	195.5	50.2	96.8
Clerks, stenographers, and other salaried employees—						
Number.....	18,462	8,088	4,321	321.3	128.3	87.2
Salaries.....	\$15,043,707	\$5,476,847	\$2,629,805	472.0	174.7	108.3
Wage earners—						
Average number.....	*259,190	209,729	133,641	93.9	23.6	56.9
Wages.....	\$174,762,153	\$138,081,633	\$80,770,449	116.4	26.6	71.0
Conductors and motormen—						
Average number.....	131,321	115,518	80,144	63.9	13.7	44.1
Wages.....	\$95,451,625	\$75,705,054	\$48,642,359	96.2	26.1	55.6
Conductors—						
Average number.....	65,726	60,032	40,141	63.7	9.5	49.6
Wages.....	\$47,101,768	\$38,234,168	\$24,025,204	96.1	23.2	59.1
Motormen—						
Average number.....	65,595	55,486	40,003	64.0	18.2	38.7
Wages.....	\$48,349,857	\$37,470,896	\$24,617,155	96.4	29.0	52.2
All other employees—						
Average number.....	127,869	94,211	53,497	139.0	35.7	76.1
Wages.....	\$79,310,528	\$62,376,579	\$32,128,090	146.9	27.1	94.1

<sup>1</sup> Exclusive of 6 companies which failed to furnish this information.

<sup>2</sup> Exclusive of 20 companies which failed to furnish this information.

<sup>3</sup> Number employed Sept. 16, 1912.

The street and electric railways gave employment to 282,461 persons in 1912, as compared with 140,769 in 1902, the increase being 100.7 per cent. During the same time the amount paid in salaries and wages increased 127.7 per cent. Although variations in methods of classifying at different censuses may affect some of the groupings, yet conductors and motormen form a clearly defined class, for which the increase during the decade was 63.9 per cent in number, and 96.2 per cent in wages. The per cent distribution of total salaries and wages is shown in Table 140.

	PER CENT DISTRIBUTION OF SALARIES AND WAGES.		
	1912	1907	1902
Total salaries and wages.....	100.0	100.0	100.0
Salaries.....	13.0	8.5	8.4
Officers of corporation.....	2.8	2.5	3.4
Managers and superintendents.....	2.7	2.4	2.0
Clerks, stenographers, and other salaried employees.....	7.5	3.6	3.0
Wages.....	87.0	91.5	91.6
Conductors and motormen.....	47.5	50.1	55.1
Conductors.....	23.4	25.3	27.2
Motormen.....	24.1	24.8	27.9
All other employees.....	39.5	41.4	36.5



## STREET AND ELECTRIC RAILWAYS.

The wages paid to conductors and motormen constituted 47.5 per cent of the total salaries and wages in 1912, as compared with 50.1 per cent in 1907 and 55.1 per cent in 1902.

Table 141 gives the comparative statistics for employees, salaries, and wages, by geographic divisions, and Table 142 the percentages of increase for the major groups of employees.

## EMPLOYEES, SALARIES, AND WAGES OF OPERATING COMPANIES, BY CLASSES OF OCCUPATION, BY GEOGRAPHIC DIVISIONS: 1912, 1907, AND 1902.

Table 141	Cen- sus.	United States.	GEOGRAPHIC DIVISIONS.									
			New England.	Middle Atlantic.	East North Central.	West North Central.	South Atlantic.	East South Central.	West South Central.	Mountain.	Pacific.	
Number of companies.....	1912	975	91	246	222	85	107	45	79	40	60	
	1907	1,939	118	247	220	73	100	40	50	28	93	
	1902	1,797	137	218	177	58	75	34	32	18	48	
Persons employed:												
Number.....	1912	282,461	34,224	93,811	66,721	20,930	19,958	9,375	8,393	4,498	24,551	
	1907	221,429	28,146	79,457	51,023	14,892	15,044	6,935	6,118	3,001	16,898	
	1902	140,709	20,867	55,061	29,893	9,512	9,839	3,780	2,951	1,560	7,306	
Salaries and wages.....	1912	\$200,890,939	\$23,285,975	\$66,387,065	\$47,607,646	\$15,988,008	\$12,501,028	\$5,824,724	\$5,717,503	\$3,997,836	\$19,583,154	
	1907	\$150,991,099	\$19,373,192	\$52,420,842	\$34,902,979	\$10,856,438	\$9,152,807	\$4,116,560	\$3,794,223	\$2,610,550	\$13,768,508	
	1902	\$88,210,165	\$13,640,549	\$38,635,905	\$19,137,389	\$6,296,257	\$5,032,132	\$1,986,846	\$1,895,591	\$1,240,552	\$5,344,854	
Salaried employees—												
Number.....	1912	23,271	1,991	6,895	5,414	1,659	2,158	780	810	494	3,070	
	1907	11,700	1,550	3,304	2,730	745	1,002	386	336	288	1,359	
	1902	7,128	1,233	2,268	1,703	490	606	186	151	103	379	
Salaries.....	1912	\$26,128,786	\$2,329,050	\$8,071,703	\$5,774,907	\$1,925,201	\$2,231,507	\$953,189	\$901,842	\$614,107	\$3,327,289	
	1907	\$12,909,466	\$1,515,565	\$3,418,274	\$3,076,243	\$1,012,565	\$1,192,053	\$460,596	\$390,150	\$367,524	\$1,476,491	
	1902	\$7,439,716	\$1,270,105	\$2,178,925	\$1,801,409	\$590,791	\$589,114	\$221,075	\$197,576	\$127,549	\$463,172	
Salaried officers of corporation—												
Number.....	1912	1,927	144	511	576	138	209	102	72	51	124	
	1907	1,518	227	400	388	93	168	74	47	40	81	
	1902	1,480	238	393	363	98	159	64	53	30	82	
Salaries.....	1912	\$5,708,553	\$457,562	\$1,650,386	\$1,466,386	\$487,538	\$555,166	\$298,183	\$162,055	\$129,304	\$495,973	
	1907	\$3,852,252	\$451,852	\$947,830	\$1,076,332	\$368,134	\$377,451	\$161,045	\$109,857	\$97,355	\$262,906	
	1902	\$2,990,745	\$458,448	\$758,408	\$780,178	\$260,709	\$260,940	\$114,567	\$119,289	\$63,070	\$176,136	
Managers and superintendents—												
Number.....	1912	2,882	262	726	836	214	328	111	149	66	190	
	1907	2,094	250	552	555	139	199	70	82	54	176	
	1902	1,327	290	369	286	120	108	35	25	16	78	
Salaries.....	1912	\$5,376,526	\$511,810	\$1,509,255	\$1,304,639	\$400,933	\$549,847	\$191,850	\$233,020	\$147,829	\$437,343	
	1907	\$3,580,367	\$393,023	\$913,932	\$374,756	\$258,420	\$355,557	\$131,752	\$148,905	\$114,264	\$388,759	
	1902	\$1,819,166	\$336,154	\$558,870	\$396,162	\$154,339	\$140,131	\$51,393	\$28,445	\$23,316	\$130,356	
Clerks, stenographers, and other salaried employees—												
Number.....	1912	18,462	1,585	5,658	4,002	1,307	1,621	567	589	377	2,756	
	1907	8,088	1,064	2,352	1,787	513	635	233	207	194	1,103	
	1902	4,321	705	1,506	1,054	281	339	87	73	57	219	
Salaries.....	1912	\$15,043,707	\$1,359,678	\$4,906,062	\$2,913,882	\$1,036,730	\$1,126,494	\$463,156	\$506,767	\$336,974	\$2,393,964	
	1907	\$5,476,847	\$669,790	\$1,556,512	\$1,125,160	\$386,002	\$459,045	\$167,799	\$131,298	\$155,905	\$625,336	
	1902	\$2,620,805	\$475,503	\$861,647	\$625,069	\$175,743	\$188,043	\$55,115	\$49,842	\$41,163	\$157,680	
Wage earners—												
Average number.....	1912	259,190	32,233	88,916	61,307	19,271	17,800	8,595	7,583	4,004	21,481	
	1907	209,729	26,590	76,153	48,298	14,147	14,042	6,540	5,782	2,713	15,499	
	1902	133,641	19,634	52,793	28,190	9,013	9,233	3,694	2,800	1,457	6,927	
Wages.....	1912	\$174,762,153	\$20,956,925	\$58,315,362	\$41,832,739	\$14,060,807	\$10,269,521	\$4,871,535	\$4,815,601	\$3,383,729	\$16,255,874	
	1907	\$138,081,633	\$17,857,627	\$49,002,568	\$31,826,731	\$9,843,873	\$7,900,754	\$3,655,904	\$3,404,073	\$2,243,026	\$12,287,017	
	1902	\$80,770,449	\$12,370,444	\$31,457,070	\$17,335,980	\$5,705,466	\$4,443,018	\$1,765,771	\$1,698,015	\$1,113,008	\$4,881,682	
Conductors and motormen—												
Average number.....	1912	131,321	16,670	41,794	30,366	10,742	9,587	4,353	4,470	2,017	11,313	
	1907	115,518	14,727	41,337	26,071	8,354	7,902	3,847	3,600	1,680	8,050	
	1902	80,144	11,860	31,858	16,245	5,802	5,512	2,112	1,783	918	4,554	
Wages.....	1912	\$95,451,625	\$10,819,828	\$30,628,007	\$23,486,192	\$7,806,487	\$5,938,195	\$2,613,888	\$3,043,211	\$1,777,500	\$9,333,817	
	1907	\$75,705,054	\$9,754,035	\$25,970,806	\$17,709,200	\$5,877,685	\$4,430,698	\$2,130,542	\$2,048,591	\$1,307,431	\$6,467,066	
	1902	\$48,642,359	\$7,349,409	\$18,965,007	\$10,464,524	\$3,530,890	\$2,578,556	\$979,675	\$1,074,761	\$713,449	\$2,986,088	
Conductors—												
Average number.....	1912	65,726	8,219	21,135	15,151	5,358	4,779	2,152	2,176	1,014	5,742	
	1907	60,032	7,447	22,439	13,563	4,150	3,906	1,902	1,772	817	4,036	
	1902	40,141	5,724	15,957	8,386	2,848	2,788	907	811	450	2,270	
Wages.....	1912	\$47,101,768	\$5,297,309	\$15,088,922	\$11,573,262	\$3,815,365	\$2,973,094	\$1,285,141	\$1,471,483	\$889,829	\$4,707,363	
	1907	\$38,234,158	\$4,858,874	\$13,353,043	\$9,008,366	\$2,804,309	\$2,187,020	\$1,047,481	\$907,002	\$653,163	\$3,234,900	
	1902	\$24,025,204	\$3,650,920	\$9,340,475	\$5,301,874	\$1,732,394	\$1,277,248	\$384,335	\$497,050	\$350,850	\$1,490,058	
Motormen—												
Average number.....	1912	65,595	8,451	20,659	15,215	5,384	4,808	2,201	2,303	1,008	5,571	
	1907	55,489	7,280	18,898	12,508	4,204	3,996	1,945	1,828	813	4,014	
	1902	40,003	5,636	15,901	7,859	2,954	2,724	1,205	972	468	2,284	
Wages.....	1912	\$48,349,857	\$5,522,019	\$15,539,085	\$11,912,930	\$3,901,122	\$2,965,101	\$1,328,747	\$1,571,728	\$887,671	\$4,631,454	
	1907	\$37,470,890	\$4,895,161	\$12,617,763	\$8,700,834	\$2,983,376	\$2,252,678	\$1,083,061	\$1,051,589	\$654,208	\$3,232,166	
	1902	\$24,617,155	\$3,695,489	\$9,624,532	\$5,162,650	\$1,798,496	\$1,301,308	\$595,340	\$577,711	\$302,599	\$1,495,030	
All other employees—												
Average number.....	1912	127,869	15,563	45,122	30,941	8,529	8,213	4,242	3,104	1,987	10,168	
	1907	94,211	11,869	34,811	22,227	5,793	6,140	2,702	2,182	1,083	7,899	
	1902	53,497	8,274	20,935	11,945	3,211	3,721	1,482	1,017	539	2,373	
Wages.....	1912	\$79,310,528	\$10,137,597	\$27,687,355	\$18,346,547	\$6,254,320	\$4,331,326	\$2,257,647	\$1,772,450	\$1,006,229	\$6,917,057	
	1907	\$62,376,579	\$8,103,592	\$23,031,762	\$14,117,531	\$3,966,188	\$3,521,056	\$1,525,422	\$1,355,482	\$935,595	\$5,819,951	
	1902	\$32,128,090	\$5,021,035	\$12,492,063	\$6,871,456	\$2,174,576	\$1,864,462	\$786,096	\$623,254	\$399,554	\$1,895,594	

<sup>1</sup> Exclusive of 6 companies which failed to furnish this information.

<sup>2</sup> Exclusive of 20 companies which failed to furnish this information.

<sup>3</sup> Number employed Sept. 16, 1912.

Table 142

EMPLOYEES, SALARIES, AND WAGES OF OPERATING COMPANIES—PER CENT OF INCREASE (BASED ON TABLE 141).

DIVISION.	Persons employed.		Salaried employees.		Wage earners.			
					Conductors and motor-men.		All other employees.	
	Num-ber.	Salaries and wages.	Num-ber.	Salaries.	Num-ber.	Wages.	Num-ber.	Wages.
United States:								
1902-1912.....	100.6	127.7	226.5	251.2	63.9	96.2	139.0	146.9
1907-1912.....	27.6	33.0	68.9	102.4	13.7	26.1	35.7	27.1
1902-1907.....	57.3	71.2	64.1	73.5	44.1	55.6	76.1	94.1
New England:								
1902-1912.....	64.0	70.7	61.5	83.4	46.7	47.2	88.1	101.9
1907-1912.....	21.6	20.2	28.5	53.7	13.2	10.9	31.1	25.1
1902-1907.....	34.9	42.0	25.7	19.3	29.6	32.7	43.4	61.4
Middle Atlantic:								
1902-1912.....	70.4	97.4	204.0	270.4	31.2	61.5	115.5	121.6
1907-1912.....	18.1	26.6	108.7	136.1	1.1	13.0	28.6	20.2
1902-1907.....	44.3	55.8	45.7	56.9	29.8	48.0	66.3	84.4
East North Central:								
1902-1912.....	123.2	148.8	217.9	220.6	86.9	124.4	159.0	167.0
1907-1912.....	30.8	36.4	98.3	87.7	16.5	32.6	39.2	30.0
1902-1907.....	70.7	82.4	60.3	70.8	60.5	69.2	86.1	105.5
West North Central:								
1902-1912.....	120.0	153.9	232.5	225.9	85.1	121.1	165.6	187.6
1907-1912.....	40.5	47.2	122.7	90.1	28.6	32.8	47.2	57.7
1902-1907.....	56.6	72.4	49.3	71.4	44.0	66.5	80.4	82.3
South Atlantic:								
1902-1912.....	102.8	148.4	256.1	278.8	73.9	130.3	120.7	132.3
1907-1912.....	32.7	36.6	115.4	87.2	21.3	33.8	33.8	23.0
1902-1907.....	52.9	81.9	65.3	102.3	43.4	72.2	65.0	88.9
East South Central:								
1902-1912.....	148.0	193.2	319.4	331.2	106.1	166.8	186.2	187.2
1907-1912.....	35.2	41.5	102.1	106.9	13.2	22.7	57.0	48.0
1902-1907.....	88.5	107.2	107.5	108.3	82.1	117.5	82.3	94.1
West South Central:								
1902-1912.....	184.4	201.6	436.4	356.5	151.2	183.2	205.2	184.4
1907-1912.....	37.2	50.7	141.1	131.2	24.4	48.6	42.3	30.8
1902-1907.....	107.3	100.2	121.5	97.5	101.9	90.6	114.6	117.5
Mountain:								
1902-1912.....	188.3	222.3	379.6	381.5	119.7	149.1	268.6	302.0
1907-1912.....	49.9	53.1	71.5	67.1	23.7	36.0	38.5	71.7
1902-1907.....	92.4	110.4	179.6	188.1	77.6	83.3	100.9	184.2
Pacific:								
1902-1912.....	236.0	266.4	710.0	618.4	148.4	212.7	328.5	264.9
1907-1912.....	46.1	42.3	125.9	125.4	40.5	44.4	37.4	18.9
1902-1907.....	130.1	157.5	258.6	218.8	76.8	116.6	211.8	207.0

The Pacific division had the largest percentages of increase for the decade, followed by the Mountain and West South Central; but for the period 1907-1912 the Mountain division had the highest rates of increase, and for the period 1902-1907 the Pacific division. As a rule, the percentages of increase for salaries and wages range higher than for the corresponding numbers of employees, whether they be of the salaried or of the wage-earning class, showing a general rise in salaries and wages. The few exceptions to the rule are undoubtedly due to differences in methods of reporting certain classes of employees at different censuses.

The number of employees is, in a general way, a measure of the size of a company. Table 143 shows

the average numbers per company for the several geographic divisions, for 1912, 1907, and 1902.

Table 143

DIVISION.	AVERAGE NUMBER OF EMPLOYEES PER COMPANY.		
	1912	1907	1902
United States.....	290	236	177
New England.....	376	239	152
Middle Atlantic.....	381	322	253
East North Central.....	301	232	169
West North Central.....	246	204	164
South Atlantic.....	187	150	131
East South Central.....	208	173	111
West South Central.....	106	122	92
Mountain.....	112	107	87
Pacific.....	409	267	152

The average for the United States as a whole was 290 in 1912, as compared with 236 in 1907 and 177 in 1902; the percentages of increase for 1902-1912, 1907-1912, and 1902-1907, respectively, being 63.8, 22.9, and 33.3.

The Pacific division led in average size, measured by number of employees, in 1912, followed by the Middle Atlantic and New England divisions; but in 1907 and 1902 the Middle Atlantic division was in the lead, followed by the Pacific division in 1907 and the East North Central division in 1902.

Table 166 (p. 324) gives the number and salaries and wages for each of the several classes of employees, as called for in the schedule used in 1912, by geographic divisions and states.

The six ranking states in number of employees were New York, Pennsylvania, Illinois, Massachusetts, Ohio, and California.

*Employee and wage statistics of operating companies, by classified groups.*—The ratios of the number of employees to miles of track, car-mileage, and number of revenue passengers carried depend upon various conditions, and the ratios for diverse company groups develop some features that may be of interest. Table 144 presents employee, wage, and ratio statistics for the several classified groups, heretofore considered, namely, companies classified according to income from railway operations, as elevated and subway and surface companies, and as companies without and with commercial lighting.

## EMPLOYEES AND WAGE STATISTICS OF OPERATING COMPANIES, BY CLASSIFIED GROUPS: 1912, 1907, AND 1902.

Table 144

	Cen- sus.	Total.	COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS.			Without commercial lighting.	With commercial lighting.	Elevated and subway.	Surface.
			Class A. \$1,000,000 and over.	Class B. \$250,000 but less than \$1,000,000.	Class C. Less than \$250,000.				
Number of companies.....	1912	975	91	155	729	760	168	7	958
	1907	939	76	130	733	709	175	6	933
	1902	797	44	81	672	628	112		
Miles of track.....	1912	41,064.82	21,305.99	9,652.09	10,106.74	31,883.35	8,825.14	517.81	40,547.01
	1907	34,088.56	15,402.09	8,341.81	10,344.66	26,404.75	6,883.65	420.40	33,608.16
	1902	22,159.96	8,414.31	4,808.47	8,937.18	18,868.43	2,460.36		
Revenue car-milage.....	1912	1,921,620,074	1,433,600,031	281,591,761	206,428,282	1,646,536,325	271,258,161	219,467,272	1,702,152,802
	1907	1,610,290,340	1,131,741,588	259,873,472	218,675,280	1,381,402,281	223,608,250	143,634,475	1,466,656,865
	1902	1,129,614,074	731,882,858	187,399,911	210,331,305	1,031,551,090	85,042,936		
Revenue passengers.....	1912	9,545,554,667	7,635,471,119	1,148,582,234	761,501,314	8,341,549,514	1,190,829,824	991,062,330	8,554,492,337
	1907	7,422,266,331	5,622,320,267	1,022,955,987	776,981,077	6,497,189,567	912,807,187	635,653,072	6,786,613,259
	1902	4,723,902,759	3,357,796,250	711,500,132	654,606,377	4,380,330,656	305,833,612		
Salaried employees:									
Number.....	1912	23,271	14,926	4,311	4,034	17,380	5,755	907	22,364
	1907	11,700	6,641	2,155	2,904	8,941	2,619	362	11,338
	1902	7,128	3,731	1,070	2,327	5,954	990		
Per 10 miles of track.....	1912	5.67	7.01	4.47	3.99	5.45	6.52	17.52	5.52
	1907	3.43	4.31	2.58	2.81	3.39	3.80	8.61	3.37
	1902	3.22	4.43	2.23	2.60	3.16	4.02		
Per 1,000,000 car-miles.....	1912	12.11	10.41	15.31	19.54	10.56	21.24	4.13	13.14
	1907	7.27	5.87	8.29	13.28	6.47	11.71	2.52	7.73
	1902	6.31	5.10	5.71	11.06	5.77	11.64		
Per 1,000,000 revenue passengers...	1912	2.44	1.95	3.76	5.30	2.08	4.84	0.92	2.61
	1907	1.58	1.18	2.11	3.74	1.38	2.87	0.57	1.67
	1902	1.51	1.11	1.50	3.55	1.36	3.24		
Salaries.....	1912	\$26,128,786	\$17,911,322	\$4,527,872	\$3,689,592	\$20,068,510	\$5,980,176	\$1,397,698	\$24,730,388
	1907	12,909,406	7,802,168	2,461,344	2,645,954	10,053,426	2,789,382	569,317	12,340,149
	1902	7,439,716	4,152,141	1,287,109	2,000,466	6,320,132	998,460		
Ratio of salaries to operating ex- penses (per cent).	1912	7.8	7.5	8.5	9.2	7.3	10.2	5.8	8.0
	1907	5.1	4.5	6.0	7.2	4.8	6.7	3.8	5.2
	1902	5.2	4.5	5.5	7.4	4.9	7.8		
Ratio of salaries to operating rev- enues (per cent).	1912	4.6	4.2	5.2	6.3	4.3	5.7	2.7	4.8
	1907	3.1	2.6	3.7	4.9	2.9	4.0	1.7	3.2
	1902	3.0	2.5	3.2	5.0	2.8	4.5		
Wage earners:									
Average number.....	1912	259,190	190,200	40,233	28,757	215,858	42,617	19,098	240,062
	1907	209,729	150,321	31,510	27,898	175,385	35,187	12,501	197,228
	1902	133,641	86,814	23,226	23,601	119,261	12,498		
Per 10 miles of track.....	1912	63	89	42	28	68	48	369	59
	1907	62	98	38	27	66	48	297	59
	1902	60	103	48	26	63	51		
Per 1,000,000 car-miles.....	1912	135	133	143	139	131	157	87	141
	1907	130	133	121	128	127	148	87	134
	1902	118	119	124	112	116	147		
Per 1,000,000 revenue passengers	1912	27	25	35	38	26	36	19	28
	1907	28	27	31	36	27	36	20	29
	1902	28	26	33	36	27	41		
Wages.....	1912	\$174,762,153	\$131,765,049	\$26,087,790	\$16,900,314	\$147,543,971	\$26,947,564	\$13,866,813	\$160,895,340
	1907	138,081,633	101,436,272	20,467,959	16,177,402	117,178,850	20,526,304	8,588,493	129,493,140
	1902	80,770,449	54,704,832	13,264,451	12,741,166	73,330,681	6,741,201		
Ratio of wages to operating expenses (per cent).	1912	52.5	55.0	40.0	42.4	53.9	46.0	58.7	52.0
	1907	54.9	53.5	49.5	44.2	56.1	49.4	56.8	54.8
	1902	56.8	59.6	56.8	47.0	57.3	52.5		
Ratio of wages to operating revenues (per cent).	1912	30.8	31.2	30.2	28.9	31.9	25.8	26.5	31.2
	1907	33.0	34.1	30.6	29.5	33.7	29.8	25.4	33.7
	1902	32.7	32.6	33.4	31.8	32.9	30.5		
Conductors and motormen:									
Average number.....	1912	131,321	97,739	19,307	14,275	110,582	20,360	13,831	127,490
	1907	118,618	83,907	16,741	14,870	98,505	16,435	14,582	110,936
	1902	80,144	52,178	13,836	14,130	72,681	6,325		
Per 10 miles of track.....	1912	32	46	20	14	35	23	126	31
	1907	34	54	20	14	37	24	109	33
	1902	36	62	29	16	39	26		
Per 1,000,000 car-miles.....	1912	68	68	69	69	67	75	30	75
	1907	72	74	64	68	71	73	32	76
	1902	71	71	74	67	70	74		
Per 1,000,000 revenue passengers	1912	14	13	17	19	13	17	7	15
	1907	16	15	16	19	15	18	7	16
	1902	17	16	19	22	17	21		
Wages.....	1912	\$95,451,625	\$72,979,444	\$13,391,743	\$9,080,438	\$81,975,657	\$13,308,953	\$3,473,008	\$91,978,617
	1907	75,705,054	56,032,821	11,029,078	8,643,155	65,499,612	10,032,756	3,172,746	72,532,308
	1902	48,642,359	33,257,227	7,819,147	7,565,985	45,004,476	3,225,960		
Ratio of wages to operating expenses (per cent).	1912	28.7	30.4	25.1	22.8	30.0	22.7	14.7	29.7
	1907	30.1	32.3	26.7	23.6	31.4	24.1	21.0	30.7
	1902	34.2	36.2	33.5	27.9	35.1	25.1		
Ratio of wages to operating revenues (per cent).	1912	16.8	17.3	15.5	15.5	17.7	12.7	6.6	17.9
	1907	18.1	18.9	16.5	15.9	18.8	14.5	9.4	18.9
	1902	19.6	19.8	19.7	18.9	20.2	14.6		

<sup>1</sup> Exclusive of 2,676 guards on New York subway trains, who are included under "All other employees." For comparative purposes these guards are included with conductors and motormen in computing the ratios.

<sup>2</sup> Includes guards on New York subway trains.

EMPLOYEES AND WAGE STATISTICS OF OPERATING COMPANIES, BY CLASSIFIED GROUPS: 1912, 1907, AND 1902—  
Continued.

**Table 144—Continued.**

	Cen- sus.	Total.	COMPANIES CLASSIFIED ACCORDING TO INCOME FROM RAILWAY OPERATIONS.			Without commercial lighting.	With commercial lighting.	Elevated and subway.	Surface.
			Class A. \$1,000,000 and over.	Class B. \$250,000 but less than \$1,000,000.	Class C. Less than \$250,000.				
Wage earners—Continued.									
All other employees—									
Average number.....	1912	127,869	92,461	20,925	14,482	105,276	22,257	5,267	112,602
	1907	94,211	66,414	14,769	13,028	76,850	16,752	7,919	86,292
	1902	53,497	34,636	9,390	9,471	46,580	6,173		
Per 10 miles of track.....	1912	3	43	22	14	33	25	243	28
	1907	28	43	18	13	29	24	188	26
	1902	24	41	20	11	25	25		
Per 1,000,000 car-miles.....	1912	67	64	74	70	64	82	57	66
	1907	59	59	57	60	56	75	55	59
	1902	47	47	50	45	45	73		
Per 1,000,000 revenue passengers	1912	13	12	18	19	13	19	13	13
	1907	13	12	14	17	12	18	12	13
	1902	11	10	13	14	11	20		
Wages.....	1912	\$79,310,528	\$58,785,005	\$12,699,047	\$7,823,876	\$65,568,314	\$13,638,611	\$10,393,805	\$68,916,723
	1907	62,376,579	45,403,451	9,438,881	7,534,247	51,679,238	10,493,543	5,415,747	56,960,832
	1902	32,128,090	21,507,005	5,445,304	5,175,181	28,326,105	3,515,241		
Ratio of wages to operating expenses (per cent).	1912	23.8	24.5	23.8	19.6	24.0	23.3	44.0	22.4
	1907	24.8	26.2	22.8	20.6	24.7	25.2	35.8	24.1
	1902	22.6	23.4	23.3	19.1	22.1	27.4		
Ratio of wages to operating revenues (per cent).	1912	14.0	13.9	14.7	13.4	14.2	13.0	19.9	13.4
	1907	14.9	15.3	14.1	13.9	14.8	15.2	16.0	14.8
	1902	13.0	12.8	13.7	12.9	12.7	15.9		

For all operating companies combined there was an increase in the number of salaried employees and wage earners in 1912 as compared with 1907, and in 1907 as compared with 1902, for each unit of measurement, except in the case of wage earners per revenue passengers carried, where a slight drop is shown from 1902 to 1912. Similar increases appear, as a rule, in the case of salaried employees of each group of companies. A certain number of salaried officials and clerks are necessary for the maintenance of a corporate organization, but the number does not increase at the same rate as the volume of business done per unit of track; for the companies of class A, handling approximately 3,600,000 revenue passengers per 10 miles of track, averaged seven salaried employees for that trackage unit, while companies of class B, with an average of 4.5 salaried employees, handled but 1,190,000 revenue passengers, and companies of class C, with 4 salaried employees, 753,000 revenue passengers. Wage earners are more intimately allied to track and traffic than are salaried employees, and the number of wage earners on a track basis is necessarily greater for the larger companies. The reverse is true when the number of wage earners is compared with the number of revenue passengers, and the changes in ratios from census to census are most marked for the larger companies.

*Relation of salaries and wages to operating expenses and operating revenues.*—The causes affecting the general operating ratio (see p. 261) are applicable to the ratio of salaries and wages to operating expenses, which for all classes of companies was 60.3 per cent in 1912, a shade higher than in 1907 but lower than in 1902. Table 145 assembles the ratios of salaries and wages to operating expenses for the several groups of companies.

**Table 145**RATIO OF SALARIES AND WAGES TO OPERATING EXPENSES,  
BY GROUPS OF COMPANIES (PER CENT).

CLASSIFICATION GROUP.	Total.			Salaries.			Wages.		
	1912	1907	1902	1912	1907	1902	1912	1907	1902
Total—All companies.....	60.3	60.1	62.1	7.8	5.1	5.2	52.5	54.9	56.8
Companies classified according to income from railway operations:									
Class A—\$1,000,000 and over.....	62.5	63.0	64.2	7.5	4.5	4.5	55.0	58.5	59.6
Class B—\$250,000 but less than \$1,000,000.....	57.5	55.5	62.3	8.5	6.0	5.5	49.0	49.5	56.8
Class C—Less than \$250,000.....	51.6	51.4	54.4	9.2	7.2	7.4	42.4	44.2	47.0
Companies without commercial lighting.....	61.2	60.9	62.2	7.3	4.8	4.9	53.9	56.1	57.3
Companies with commercial lighting.....	56.2	56.1	60.3	10.2	6.7	7.8	46.0	49.4	52.5
Elevated and subway railways.....	64.6	60.6	.....	5.8	3.8	.....	58.7	56.8	.....
Surface railways.....	60.0	60.0	.....	8.0	5.2	.....	52.0	54.8	.....

The ratios for salaries and wages combined increase uniformly from class C to class A—that is, from the smaller to the larger groups. This is the reverse of the movement of operating ratios, which range high for the small companies and low for the large companies. When salaries and wages are considered separately, however, it will be seen that the ratios of salaries to operating expenses decrease steadily as the companies grow larger, while the ratios for wages increase; for consolidation into larger companies and expansion of operations tend to reduce the proportionate number of salaried employees, while the large companies operating in the more densely populated districts require comparatively larger forces of workmen and correspondingly greater outlays in wages.

## STREET AND ELECTRIC RAILWAYS.

The ratios of salaries and wages combined and of wages alone to total operating expenses are lower for railway companies that do commercial lighting than for those without commercial light and power service, while the salary ratio is higher; consequently the expenses incident to electric light service are factors tending to reduce the ratios of wages to total operating expenses for the smaller companies, among which are

found most of the companies with commercial light and power service.

Table 146 shows the ratios of total salaries and wages to operating expenses, by states, for the three census years, arranged in the order of the ratios for 1912. There is a wide range in these ratios, and conditions affecting them are so varying that a comparison by states should be made with caution.

Table 146	STATE.	RATIO OF SALARIES AND WAGES COMBINED TO OPERATING EXPENSES (PER CENT). <sup>1</sup>			STATE.	RATIO OF SALARIES AND WAGES COMBINED TO OPERATING EXPENSES (PER CENT). <sup>1</sup>		
		1912	1907	1902		1912	1907	1902
	United States.....	60.3	60.1	62.1	Indiana.....	59.6	56.4	66.3
	Oregon.....	68.0	65.2	67.0	Ohio.....	59.1	56.0	65.9
	District of Columbia.....	65.4	62.4	65.0	Delaware.....	58.5	52.4	49.3
	Utah.....	65.1	60.8	59.6	New Jersey.....	57.9	54.0	60.6
	Maine.....	65.0	53.7	51.7	Nebraska.....	57.3	66.7	57.6
	Minnesota.....	64.3	53.7	63.4	Michigan.....	56.6	63.4	62.0
	Colorado.....	64.0	68.6	63.2	Idaho.....	56.0	53.8	60.2
	Tennessee.....	63.3	55.5	55.5	Missouri.....	55.3	60.3	62.1
	Wisconsin.....	63.1	61.2	72.5	Alabama.....	54.9	45.8	62.2
	Connecticut.....	63.0	65.2	60.7	North Carolina.....	54.7	47.4	49.0
	Massachusetts.....	63.0	60.9	60.3	Georgia.....	53.8	53.5	69.6
	Pennsylvania.....	63.0	60.5	64.7	Arkansas.....	53.2	57.3	60.5
	Illinois.....	62.9	53.1	56.3	Virginia.....	52.7	49.5	49.7
	Maryland.....	62.7	60.3	60.8	Florida.....	52.5	53.6	59.7
	Iowa.....	62.6	55.3	60.8	Washington.....	52.2	65.5	64.0
	West Virginia.....	62.4	54.5	61.0	Kansas.....	51.8	59.9	65.6
	Louisiana.....	61.5	62.2	66.4	New Hampshire.....	51.8	43.6	46.9
	California.....	61.4	64.0	74.2	Vermont.....	50.9	49.9	56.5
	Montana.....	61.2	58.4	53.0	New Mexico.....	50.4	50.0	57.5
	Oklahoma.....	61.2	52.2	---	Texas.....	50.2	50.0	60.0
	South Dakota.....	61.1	77.9	---	South Carolina.....	47.7	45.0	44.9
	New York.....	60.7	63.7	62.1	Mississippi.....	46.4	49.8	46.3
	North Dakota.....	60.6	53.1	---	Wyoming.....	41.0	---	---
	Kentucky.....	60.2	51.6	48.2	Arizona.....	38.8	49.1	50.3
	Nevada.....	59.8	36.5	---				
	Rhode Island.....	59.6	68.9	60.4				

<sup>1</sup> Italics indicate ratios below the average for the United States.

Table 147 shows the ratios of salaries and wages to operating revenues, by groups of companies classified according to income and as elevated and subway, and surface railways, for 1912, 1907, and 1902.

Table 147	CLASSIFICATION GROUP.	RATIOS OF SALARIES AND WAGES TO OPERATING REVENUES, BY GROUPS OF COMPANIES (PER CENT).								
		Total.			Salaries.			Wages.		
		1912	1907	1902	1912	1907	1902	1912	1907	1902
	Total—All companies.....	35.4	36.1	35.7	4.6	3.1	3.0	30.8	33.0	32.7
	Companies classified according to income from railway operations:									
	Class A—\$1,000,000 and over.....	35.4	36.8	35.1	4.2	2.6	2.5	31.2	34.1	32.6
	Class B—\$250,000 but less than \$1,000,000.....	35.4	34.3	36.6	5.2	3.7	3.2	30.2	30.6	33.4
	Class C—Less than \$250,000.....	35.2	34.7	36.8	6.3	4.9	5.0	28.9	29.8	31.8
	Companies without commercial lighting.....	36.2	36.6	35.8	4.3	2.9	2.8	31.9	33.7	32.0
	Companies with commercial lighting.....	31.5	33.8	35.0	5.7	4.0	4.5	25.8	29.6	30.5
	Elevated and subway railways.....	29.2	27.0	---	2.7	1.7	---	26.5	25.4	---
	Surface railways.....	36.0	36.9	---	4.8	3.2	---	31.2	33.7	---

## CHAPTER IX.

### SALE OF CURRENT BY ELECTRIC-RAILWAY COMPANIES.

The growth of electric railways since the census of 1902 has been accompanied by a large increase in the sale of current to other roads or to the general public for light, power, or other purposes. There were 425 railway companies in 1912 which sold current, including (a) 44 companies operating electric light and power departments for which reports separate and distinct from those relating to the railway operations could be made; (b) 169 companies operating electric light and power departments more or less closely affiliated with the railway departments and for which separate reports covering capitalization, operating expenses, etc., could not be made; and (c) 212 companies that sold current to affiliated companies or connecting lines or incidentally to the public. The light and power

departments of the first class (a) are treated as central electric light and power stations, and the statistics relating thereto are included in the report for that branch of the electrical industries. The statistics bearing upon the lamp installations of the light and power departments not separable from railway operations are given in the report on Central Electric Light and Power Stations (p. 56), and need not be duplicated here. The income statistics for these departments are also given in the report on Central Electric Light and Power Stations (p. 18), in order to show the total income from electric light and power service.

Table 148 shows the revenue derived from sale of current and the income of electric light and power departments, by class of service, for 1912, 1907, and 1902.

**Table 148**

CLASS OF SERVICE.	REVENUE FROM SALE OF CURRENT AND INCOME OF ELECTRIC LIGHT AND POWER DEPARTMENTS, BY CLASS OF SERVICE: 1912, 1907, AND 1902.					
	1912	1907	1902	Per cent of increase. <sup>1</sup>		
				1902-1912	1907-1912	1902-1907
Revenue from sale of current for light and power.....	\$36,500,030	\$20,093,302	\$7,703,574	373.8	81.7	160.8
Companies with light and power departments.....	\$30,984,555	\$16,576,555	\$6,271,815	394.0	86.9	164.3
Other companies.....	\$5,515,475	\$3,516,747	\$1,431,759	285.2	56.8	145.6
COMPANIES WITH LIGHT AND POWER DEPARTMENTS.						
Number.....	169	177	118	43.2	-4.5	50.0
Income of light and power departments.....	\$31,515,582	\$17,291,824	\$6,469,726	387.1	82.3	167.3
Electric service.....	30,984,555	16,576,555	6,271,815	394.0	86.9	164.3
Commercial.....	26,102,077	13,778,714	4,847,200	438.5	89.4	184.3
Municipal street lighting.....	2,682,524	2,254,957	1,417,985	89.2	19.0	59.0
Municipal building lighting.....	134,894	( <sup>2</sup> )	( <sup>2</sup> )	.....	.....	.....
Sale of electric current to other public-service corporations.....	2,065,060	542,884	6,630	.....	280.4	.....
Profit on merchandise sales.....	140,820	240,704	( <sup>2</sup> )	.....	-41.5	.....
Income of light and power departments from other sources.....	390,207	474,565	197,911	97.2	-17.8	139.8
Estimated value of free service furnished municipalities (not included under income).....	65,951	33,697	( <sup>2</sup> )	.....	95.7	.....

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

The income from current furnished for commercial service constituted 82.8 per cent of the income of the light and power departments in 1912, as compared with 79.7 per cent in 1907 and 74.9 per cent in 1902.

The ratio of increase for the decade 1902-1912 in revenue from sale of current (373.8 per cent) was considerably higher than the ratio of increase for trans-

portation revenues (120.4 per cent), the revenues from the sale of current constituting 6.6 per cent of the combined transportation revenues and revenues from sale of current in 1912, as compared with 4.9 per cent in 1907 and 3.2 per cent in 1902.

The distribution of the electric light and power departments of electric railways, by states, in 1912, 1907, and 1902, is shown in Table 149.

Table 149

DIVISION AND STATE.	ELECTRIC RAILWAYS WITH ELECTRIC LIGHT AND POWER DEPART- MENTS.			DIVISION AND STATE.	ELECTRIC RAILWAYS WITH ELECTRIC LIGHT AND POWER DEPART- MENTS.		
	1912	1907	1902		1912	1907	1902
UNITED STATES.....	169	177	118	SOUTH ATLANTIC:			
GEOGRAPHIC DIVISIONS:				Delaware.....	1		1
New England.....	6	6	6	Maryland.....	1	1	1
Middle Atlantic.....	12	18	12	Virginia.....	7	10	7
East North Central.....	49	53	32	West Virginia.....	5	7	3
West North Central.....	22	20	14	North Carolina.....	6	8	5
South Atlantic.....	35	41	30	South Carolina.....	2	3	3
East South Central.....	14	16	11	Georgia.....	7	7	7
West South Central.....	14	11	3	Florida.....	4	5	3
Mountain.....	7	5	3	EAST SOUTH CENTRAL:			
Pacific.....	10	7	7	Kentucky.....		2	2
NEW ENGLAND:				Tennessee.....	4	3	2
Maine.....	4	3	3	Alabama.....	6	5	4
New Hampshire.....		1	1	Mississippi.....	4	6	3
Vermont.....	1			WEST SOUTH CENTRAL:			
Massachusetts.....	1	1		Arkansas.....	5	5	2
Connecticut.....	1	1	2	Louisiana.....	3	2	1
MIDDLE ATLANTIC:				Oklahoma.....	2		
New York.....	8	11	10	Texas.....	4	4	
New Jersey.....			2	MOUNTAIN:			
Pennsylvania.....	4	7		Montana.....	2	1	1
EAST NORTH CENTRAL:				Colorado.....	3	2	2
Ohio.....	21	20	11	Utah.....	1	1	
Indiana.....	8	7	2	New Mexico.....		1	
Illinois.....	10	12	4	Arizona.....	1		
Michigan.....	6	7	6	PACIFIC:			
Wisconsin.....	4	7	9	Washington.....	9	6	4
WEST NORTH CENTRAL:				Oregon.....	1	1	1
Minnesota.....	1	1	1	California.....		1	2
Iowa.....	12	11	8				
Missouri.....	3	4	3				
Nebraska.....	1	1	1				
Kansas.....	5	3	1				

The distribution of the revenue from sale of current for the three years, by geographic divisions and states, is given in Table 161 (p. 308).

Table 150 gives the statistics pertaining to revenue from sale of current and to income, by detailed accounts and by geographic divisions, for 1912.

Table 150

Table 150		REVENUE FROM SALE OF CURRENT AND INCOME OF ELECTRIC LIGHT AND POWER DEPARTMENTS, BY GEOGRAPHIC DIVISIONS: 1912.											
DIVISION.	Revenue from sale of electric current for light or power—All companies.	Revenue from sale of current by companies without light and power departments.	Number of operating companies.	Electric railways operating electric light and power departments.									Estimated value of free service furnished municipalities (not included under income).
				Aggregate.	Income of light and power departments.					Profit on merchandise sales.	Income of these departments from other sources.		
					Total.	Electric service.			Sale of electric current to other public-service corporations.				
						Commercial.	Municipal street lighting.	Municipal building lighting.					
United States.....	\$36,500,030	\$5,515,475	169	\$31,515,582	\$30,984,555	\$26,102,077	\$2,682,524	\$134,894	\$2,065,060	\$140,820	\$390,207	\$55,051	
New England.....	1,384,764	339,439	6	1,074,634	1,045,325	924,134	105,029	10,205	5,957	3,093	26,216	.....	
Middle Atlantic.....	3,381,090	2,404,555	12	986,755	976,535	521,623	259,538	55,848	139,526	5,544	4,676	11,392	
East North Central.....	8,330,213	1,250,028	49	7,233,153	7,080,285	5,413,936	670,634	7,241	988,474	48,897	103,971	13,560	
West North Central.....	2,233,356	610,091	22	1,740,740	1,623,265	1,437,585	174,029	6,911	4,740	9,862	107,613	8,018	
South Atlantic.....	7,089,358	234,066	35	6,901,540	6,825,292	5,931,476	686,015	33,447	174,354	36,049	40,199	5,354	
East South Central.....	2,766,420	108,048	14	2,664,354	2,660,372	2,428,230	207,647	840	23,655	2,198	1,784	3,150	
West South Central.....	1,860,737	400,622	14	1,480,764	1,460,115	1,297,846	108,824	5,069	48,376	4,766	15,882	1,983	
Mountain.....	2,628,273	61,381	7	2,616,307	2,566,892	2,330,949	155,336	11,149	69,458	16,408	33,007	22,494	
Pacific.....	6,825,719	79,245	10	6,817,335	6,746,474	5,816,298	315,472	4,184	610,520	14,003	56,858	.....	